THE LACKAWANNA VALLEY BY GEORGE INNESS · COURTESY NATIONAL GALLERY OF ART, WASHINGTON, D. C., GIFT OF MRS. HUTTLESTON ROGERS · See PAGE 8

DUN'S REVIEW

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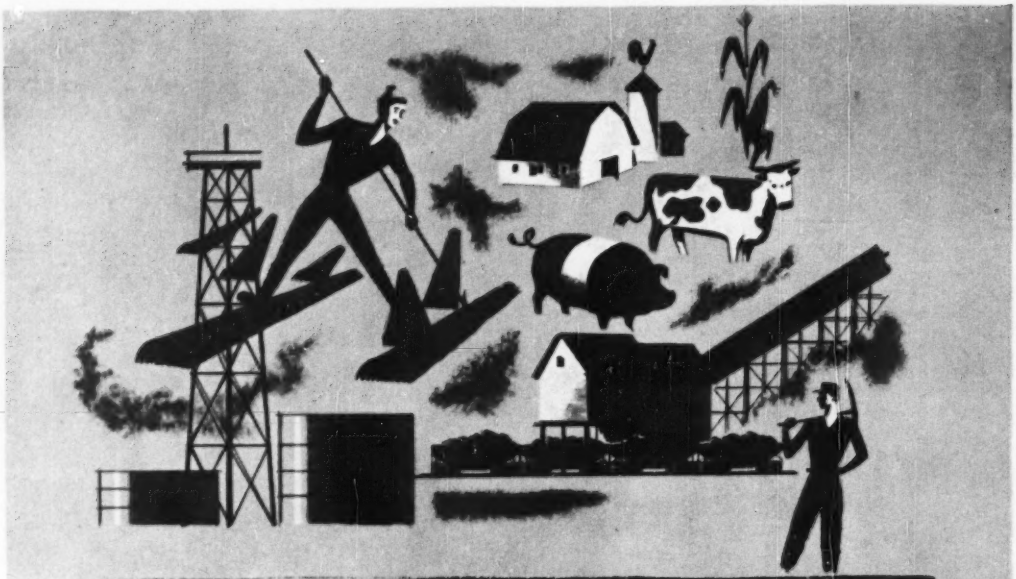

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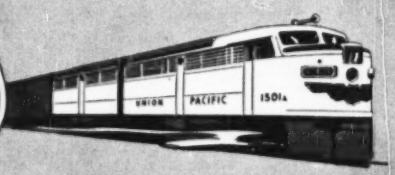

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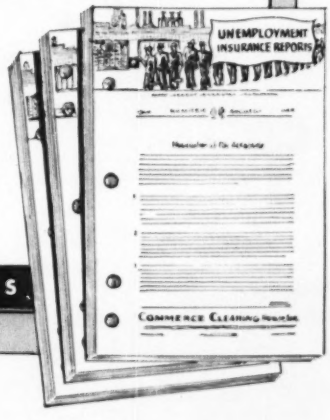

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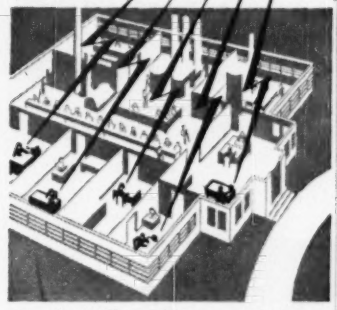

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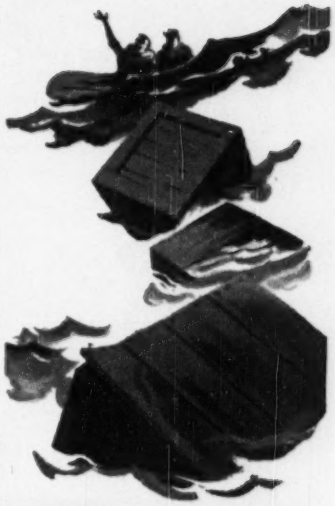

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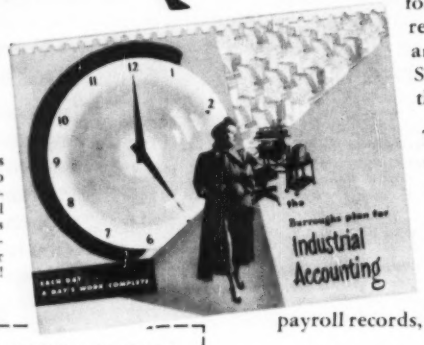

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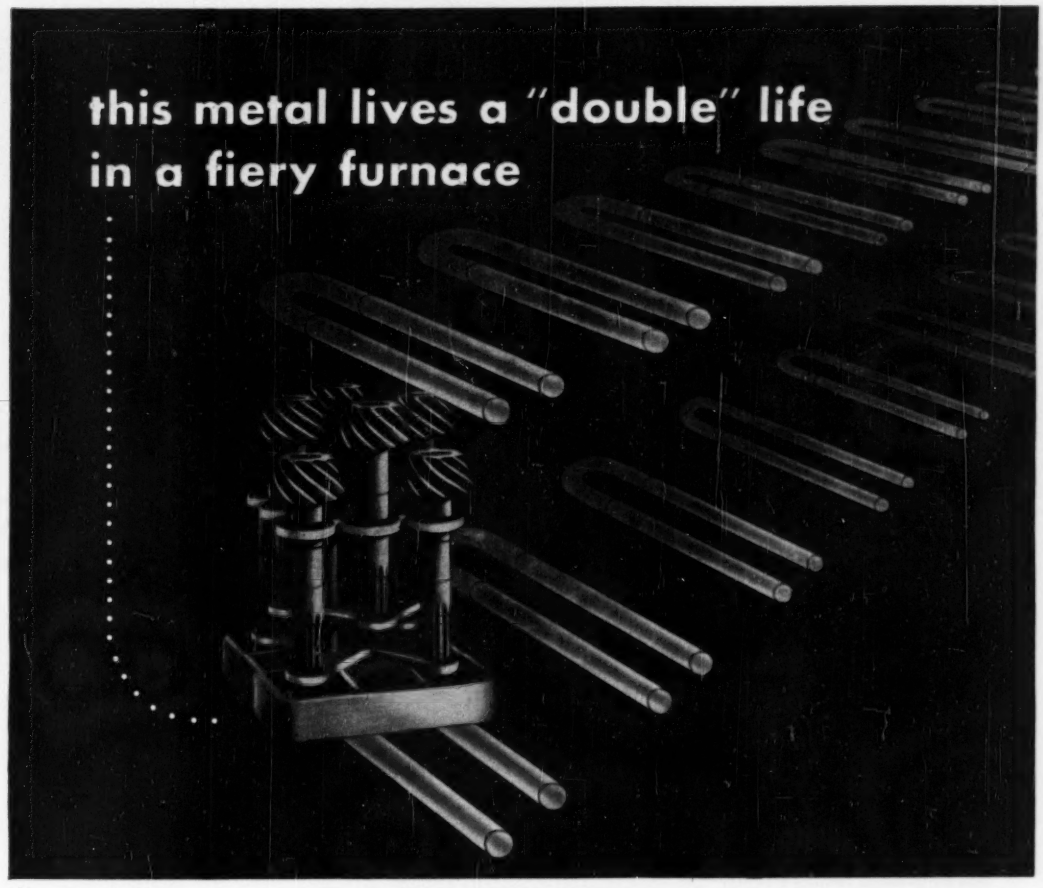

Twice the service life . . . twice the number of parts produced . . . double the weight load is the record of this Brake Shoe Thermalloy* tray

Results like this are a matter of exceptional metallurgical and design engineering and practical production knowledge. Case history after case history demonstrates that the selection of the right materials . . . plus refinements in design . . . are often most important in increasing service life.

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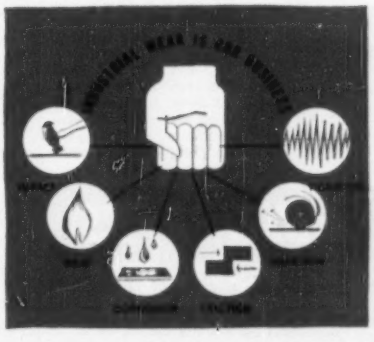

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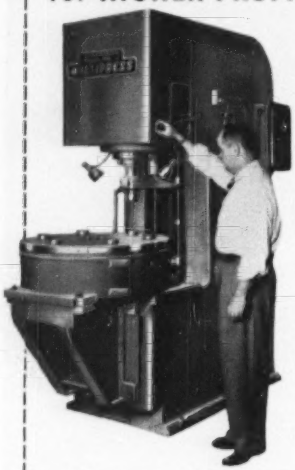

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The Cover

THE LACKAWANNA VALLEY

GEORGE INNESS was a master at capturing broad sweeps of landscape and placing them upon canvas with delicate and sensitive feeling. In "Lackawanna Valley," the roundhouse of the Delaware, Lackawanna & Western Railroad at Scranton, Pennsylvania, in the late 1800's occupies the middle distance, as a tiny locomotive puffs its way across the floor of the peaceful valley.

Railroads were the warp and woof of the early commerce pattern as they criss-crossed the nation, linking rural communities with growing cities.

From the time of the first train, drawn by a steam locomotive from Albany to Schenectady in 1831, trackage across the nation has grown to over one-quarter million miles.

While trucks and planes have cut deeply into the freight traffic of railroads, and buses and fast planes have cut into their passenger traffic, the railroads remain the backbone in our system of spanning space up and down and across the land.

Total property investment in railroads was listed at $30,081,589,893 in 1948* by the Interstate Commerce Commission, and to investors in these properties railroads paid $289,246,512 in dividends in the same year.

When we add to these figures the 1,326,906 railway employees earning an estimated $4,770,000,000 in 1948 we begin to get some idea of the tremendous importance of railroads in our economy.

To-day, as you zip through towns and cities aboard some crack train guided by steel rails, flashing colored signal lights, and a confident hand at the throttle, reflect for a moment—only 120 years ago the Baltimore & Ohio Railroad inaugurated its first passenger train—drawn by horses over 14 miles of track.

*Latest available figures.

CLARENCE SWITZER

THE PRINT, "LACKAWANNA VALLEY," IS ONE OF A SERIES OF SUBJECTS CURRENTLY APPEARING ON THE COVERS OF "DUN'S REVIEW." THE PRINTS HAVE SHOWN AND WILL CONTINUE TO SHOW SOME OF THE EARLY EVENTS, CIRCUMSTANCES, OR WAYS OF LIFE DURING THE NINETEENTH CENTURY WHICH SO RICHLY CONTRIBUTED TO OUR PRESENT IMPORTANCE AS A PEOPLE AND A NATION.

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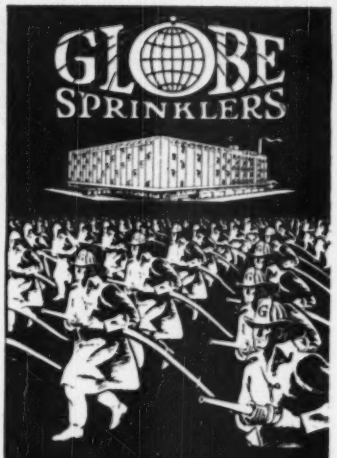

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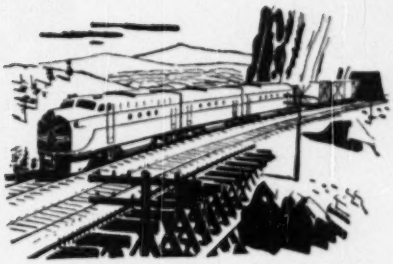

Fuel cost on freight trains reduced 58%

Between July 1949 and the end of the year, the Chicago and North Western Railway increased its fleet of General Motors Diesel locomotives from 47 to 107 units. This new equipment made it possible for the railroad to handle 60.7% of its freight gross ton-miles with Diesel power.

Fuel cost on these Diesel units was 14 cents per 1,000 gross ton-miles as compared with 31.2 cents on steam locomotives handling the balance of freight operations—*a saving of 58% in favor of GM Diesels!*

The North Western has since added 30 more GM Diesel units which will enable the carrier to haul a still larger percentage of its freight at reduced fuel cost.

Fuel economy is only one reason why so many railroads are dieselizing more and more of their freight, passenger and switching operations. Greater dependability, lower maintenance, more economical parts replacement—all help offset other rapidly increasing railroad costs.

Strong solvent railroads in the hands of competitive industry are essential to America's prosperity and growth. Fifteen years' experience has demonstrated that dieselization with General Motors locomotives is the soundest investment a railroad can make.

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THE SHIFT CHANGES—DEVANEY PHOTOGRAPH

A successful business man from Northern Ireland offers his prescription for labor-management harmony in the present era of social unrest and ever-growing demands on industry. This is one of a series of articles presenting the diversified and often conflicting opinions of men of varied interests and backgrounds.

Emphasis on Men . . . . ?

R. CLEMENT WILSON

Chairman and Managing Director, The Newforge Organisation

PERHAPS because I am getting older, and perhaps because the outward signs of the difference in the standards of living between the people of the United States and those of the United Kingdom are now so marked, I have been led to reflect more and more on this present visit of mine on the purpose to which industry is directed. In this great country—and here I am generalizing—it reflects the mood of the people. It is vital and efficient, impatient, enterprising, and . . . huge. It thinks along broad lines, in vast numbers, and in vast quantities. The accelerator is always down and the needle of the speedometer up. From plant operatives to presidents the strain imposed is tremendous.

To me, it is in grave danger of becoming *impersonal*. In increasing the degree of its mechanization it has tended to mechanize its men, and, what may be very much more, to regiment their thoughts and their actions. This is a sweeping statement for a guest in this country to make, but my hosts, wherever I have been, have not only been frank but have welcomed frankness on my part. They have encouraged me to speak freely and in return have spoken freely. Many of them have seen what I as a visitor have so clearly seen: the herding of men and women not through fear but through the compelling economic forces within free institutions.

THE owner and active head of a large meat-packing and canning company which traces its history back for more than a century, R. Clement Wilson can speak proudly of the *esprit de corps* and enthusiasm of the people in his organization. During the past two decades Mr. Wilson has made a number of extended tours of the United States to learn of the latest developments in the technology of his industry. His latest pilgrimage, one of six weeks, was completed in June. He is the author of *Group Enterprise* and other works, and a well-known member of various British food manufacturers' associations.

One has only to stand near a subway at peak traffic periods to see the swallow and belch of human material by a machine. Or again one may visit a cinema and in the darkness reflect that millions of men and women are spending hard-won leisure in *effortless* absorption of machine-made means of escape. Speedways, stadia, dance halls, and so on all attract their herds finding relaxation from the increasing mechanization of their working hours. In factories, offices, and stores there is an increasing measure of mechanization, slowly but insidiously mastering the men it was designed to serve and develop.

Even the welfare programs in some factories have become "mechanized." I know of magnificent plants through-

out America situated in lovely settings "manufactured" from the surrounding countryside. They are equipped with magnificent sports grounds, dispensaries, canteens, and the most up-to-date personnel offices staffed by specialists. The specialists have compiled every conceivable form of chart to illustrate the myriad facets of human behavior. Their office equipment is admirable; there are adding machines, inter-coms, dictaphones—everything in fact to aid in the measuring of man in the abstract.

But there appears to be one glaring omission. It is human understanding and sympathy. These specialists in human relations, estimable though many of them are, from the mechanization of their methods, have become mechanized in their outlook, and have lost the "human touch." In attempting "specifications" for men they have overlooked that they are dealing with *men* and *women*.

Personnel Policy

I cannot help setting this picture of extreme efficiency against that of the personnel office in one of our smaller factories in Ulster. There our personnel officer is a woman always bearing a slightly worried and harassed look. She has never read a book on psychology and her records can be interpreted only by herself. But she is a fountain of natural understanding, knowledge, and sympathy. To her the women in the factory, whatever their age, are her "girls," and such is her mien that she is the confidante of many. Perhaps her secret is that in carrying out her duties she is performing a natural act with no other thought of result but that of helping others. Psychologists could explain her; I only hope they never will.

She has what I have termed in my book, *Group Enterprise*, "social skill." The choice of the term was not the happiest for it has been confused with artifcially good manners, acquired breeding, behavior, accent, and the like. Its strict definition is "the art of securing co-operation," and we place the highest emphasis upon it in selecting men and women for appointments to our organization. It is not particularly easy to identify and it is certainly not a guarantee of technical skill. But without it a single individual can promote discord among, and set in conflict, an otherwise happy team of men and women. I am not writing here of the ordinary malcontent or the professional or inveterate agitator, but of the man or woman who just does not fit in, the man who doesn't easily co-operate or induce co-operation. He is always a refractory element and it is surprising the stoppages he can cause.

COMMUTERS PASSING THROUGH SOUTH STATION, BOSTON, MASS.—DEVANEY PHOTOGRAPH

"So often one gets the impression that American industry is building a monster machine which will completely dominate the lives of its men and women and destroy their individuality; that this machine, in turning out products of a common pattern, is imposing a pattern on the men and women whom it should serve but who, in fact, serve it."

We have established in our organization a very clearly defined purpose for our united efforts. As our principal objective we have taken the following clearly stated and publicly advertised aim:

> "Whilst recognizing our responsibilities and obligations to the suppliers of our raw materials and the consumers of our finished products, our main desire is to secure the *welfare, development, and security of the people in the Organization.*"

We have been accused of idealism and unrealism in adopting this aim, and have been told that our emphasis is all wrong. "Give a square deal to the producer of your raw materials and sell not only quality but satisfaction to the consumers of your finished products and the welfare, development, and security of those employed in your organization will be achieved," say the critics of our policy. We maintain that for too long has industry looked outside and forgotten its man inside, and for too long has its success been judged by the profits in its financial statements.

To me industry is a living body of men, each with his individual hopes and fears and each with his responsibilities and privileges, freely bound together in common purpose, and served by the

PROVOCATIVE . . . . BUT BASIC?

WHILE seemingly captious at times, this frank statement from a visitor to these shores sheds light on the kind of thinking that has influenced many across the seas—and even some over here. More thoughtful attention than may be apparent has long been given here to such questions as:

Is there a vital factor that is sometimes missing in otherwise complete personnel programs?

DOES emphasis on full employment of all the *men* possibly overlook considerations concerning employing all the *man*?

DOES mechanization bring higher standards of physical living at a necessary sacrifice of other values?

Is initiative—and progress—helped or hindered by provisions for more complete security?

machines of their creation. That, to me, is the correct orientation. That, to me, places the emphasis fairly and squarely where it belongs. In a group welded together in common purpose for the promotion of their mutual welfare, development and security, there will be a sense of responsibility and obligation to the producers of their raw materials and the consumers of the finished products. But remove that purpose and the group must devolve into a machine, tended by men and women, each with his own personal, and frequently conflicting objectives.

We believe that industry's first duty is to strive to offer security of employment to those engaged in it. Again, we have been criticized for this emphasis. It has been claimed by some industrialists that insecurity is one of the greatest incentives to production. If you give a man security of employment, they assert, you render him complacent and destroy his spirit of adventure and his enterprise. He becomes a drone, content to jog along in a rut. He becomes pauper-minded and ready to leave his destiny to others.

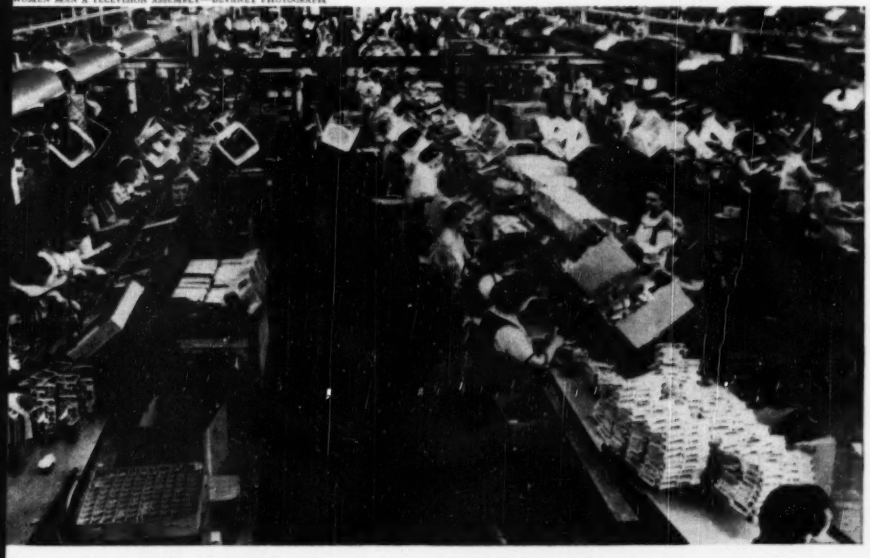
I cannot accept these arguments for they affront my whole knowledge of the men and women engaged in industry. I saw industry during the slump years between the wars, and I saw men and women denied, through no fault of their own, the opportunity to employ their talents. They did not lack a spirit of adventure, or initiative and courage, as they showed ten years later, but often industry's too rigid preservation of its profit system condemned them to a fruitless existence. If unemployment is a spur to production, it is one that should never be used in a civilized state.

I know that it is argued that genius can only flourish in a garret under extreme adversity, but how few of us are geniuses! The vast majority of us has simple ambitions and simple tastes—and we soon acquire, in this modern age, responsibilities which we cannot, and would not, shirk. We look for security not so much for ourselves as for our dependents, for only through security can we discharge our obligations to them.

And so to me industry must plan for the security of its men so that it can free them to express, each in his own individual way, the latent talents within them. Industry must provide the platform, or spring-board, from which men, freed from the stultifying thought

(Continued on page 44)

WOMEN MAN A TELEVISION ASSEMBLY—DEVANEY PHOTOGRAPH



"In a group welded together in common purpose for the promotion of their mutual welfare, development and security, there will be a sense of responsibility and obligation to the producers of their raw materials and the consumers of their finished products. But remove the purpose and the group must devolve into a machine tended by men and women, each with his own personal, and often conflicting, objectives."

A LOT OF PEOPLE ARE UP IN THE AIR OVER THE FUTURE OF TELEVISION, BUT THE INDUSTRY KEEPS RIGHT ON SOARING. PERHAPS A BIRD'S-EYE VIEW WILL HELP TO SEE WHAT LIES OVER THE HORIZON FOR THIS FLEDGLING—ACME PHOTOGRAPH

Television To-day and To-morrow

WAYNE COY
Chairman, Federal Communications Commission

"What" CALLED THE FCC NEARLY TWO YEARS AGO TO TELEVISION, THE RUNAWAY INDUSTRY OF POST-WAR AMERICA. IT DIDN'T STOP, BUT IT SLOWED ENOUGH TO GIVE A GLIMPSE OF ITS SIZE, ITS RANGE, AND ITS COLOR. HERE IS WHAT MAY BE EXPECTED WHEN THE FCC AGAIN GIVES THE INDUSTRY A FREE REIN, POSSIBLY THIS FALL.

TELEVISION has become the wonder industry of post-war America.

Starting at scratch after the war, television has become the nation's fastest-growing industry and its implications for the future are commanding the most widespread and intensive attention of the public, broadcasters, manufacturers, investors, and students of social, economic, and political trends. It is bound to have far-reaching impacts on all phases of our existence.

Television is destined to become America's dominant type of broadcasting. It will be our foremost medium for the dissemination of information, education, and entertainment. Its mushrooming growth will result in serious readjustments on the part of our other mass mediums. I confidently expect this new medium to stimulate the informational, educational, entertainment, and commercial activities of this nation far beyond anything we have yet experienced.

To the advertiser, television is a tool of unrivalled effectiveness in the presentation of his advertising message. This means a new upsurge in America's far-famed mass production and mass consumption economy, and will further strengthen our position of world leadership. It will raise our living standards to new heights. Television offers the advertiser far more than a show window in which he can display his goods. This electronic medium permits him to demonstrate his wares. He can greet the customer under ideal conditions in his own living room with no distracting influences. With the customer relaxed and concentrating, the advertiser can employ many vivid means to acquaint him with his goods or services.

At his command is a wider variety of visual aids than he has ever been able to employ before—the presentation of the actual subject, motion pictures, still pictures, paintings, graphs, maps, animated charts, animated cartoons. And to these he can add speech, drama, music, and sound effects.

Although television is only on the threshold of its development, American advertisers last year spent some $35 million in television broadcasting.

Because of the costliness of television operation, there has been some apprehension as to the ability of the advertisers to support the new medium, in addition to supporting other forms of advertising. Leaders of the industry, however, assert that because of its heightened effectiveness, television advertising may prove to be the cheapest form of advertising—cheapest when measured in terms of sales per advertising dollar invested.

Educators in every section of the nation are studying the potentialities of this new art for the speeding up of the educational processes. This has become particularly important with the current over-crowding of the schools. Properly employed, television can be an electronic blackboard of the future.

The full impact of television on newspapers and magazines is not yet clear. For the time being, these publications are reaping a rich harvest from the space sold to the manufacturers of television sets and this will go on for at least a decade. Experience so far indicates that television is capable of arousing interest in a wide variety of subjects on which the viewer can gather additional background in newspapers and magazines as well as books.

The problem of competition within the field of broadcasting itself is a matter of wide speculation. There has been an unprecedented expansion in our aural broadcasting system since the war so that now we have 2,100 AM (Amplitude Modulation or standard) stations and 700 FM (Frequency Modulation) stations on the air. I believe that we are always going to require an extensive aural broadcasting service although doubtless adaptations will be necessary in meeting the new visual types of program competition.

Television's skyrocketing growth in the past four years has been one of the outstanding success stories in the history of American industry. When the war ended there were a half dozen stations on the air. To-day there are more than 100 in actual operation in principal cities from coast to coast. Small as this number is compared to the eventual number, it is estimated that they can provide television to more than one-third of all the families in the United States. Of course, these families don't all have sets, but sets are cascading from assembly lines at headlong speed.

At the war's end there were around 7,000 television receivers in the hands of the public. To-day this number has grown to around 6 million. Industry leaders predict that this set figure will pass the 8 million mark by the end of this year and go beyond the 28 million mark by the end of 1954.

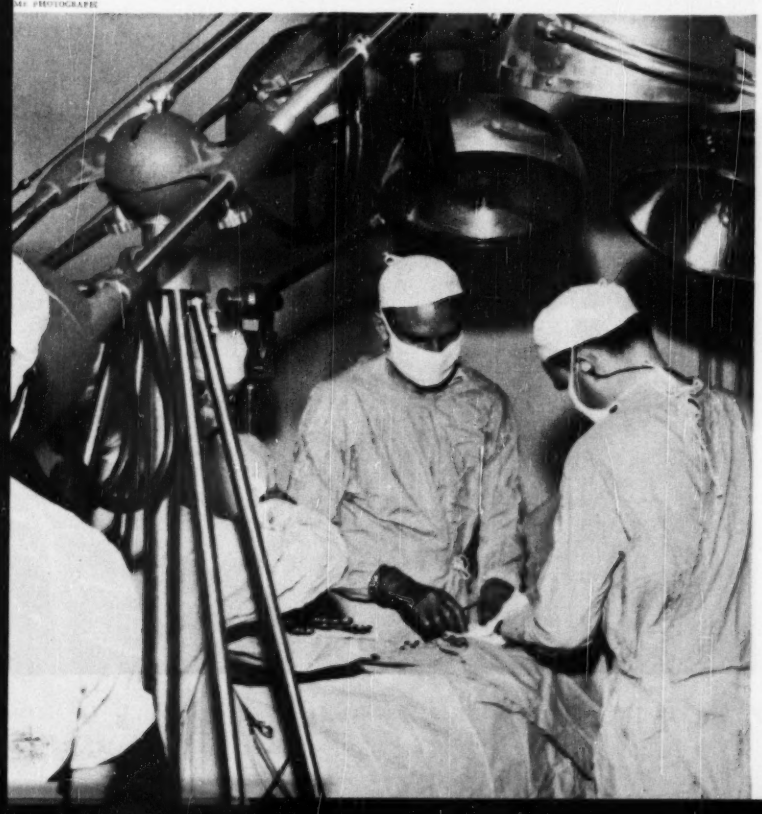
Two in a Family

So irresistible has television become that despite the comparative higher cost, video seems to be following the trend of aural broadcasting in that families are beginning to purchase a second set. It is estimated that more than 200,000 families will have two sets by the end of this year. The retail sales of radio receivers in 1947 totalled more than $1 billion, with television receivers accounting for only $80 million. But the estimates for this year show a radical reversal. It is predicted that only $360 million will be spent for radio receivers, while consumers will hand over $1.2 billion for television sets.

Television's breathless progress is all the more remarkable when we realize that it has been going on in spite of engineering problems that compelled the Federal Communications Commission to stop authorizing all new station construction more than a year and a half ago. When all the presently authorized 109 stations are completed —in a few months—no additional stations can be started until the Commission formulates new allocation policies for television's further development.

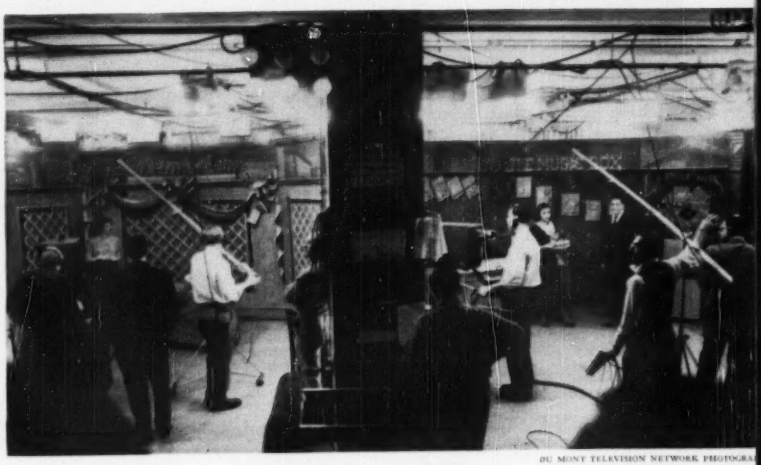
The present system of television was established by the Commission in 1945 as a part of a general allocation of frequencies to many new types of radio services. The Commission allocated thirteen channels in the Very High Frequency band which is located in the radio spectrum below 300 megacycles —popularly known as the downstairs region.

The Commission realized at the time that these were too few channels to provide adequate television service over



"Scalpel . . . . suture . . . . camera . . . . " New techniques, new uses, new developments are steadily broadening the boundaries of television. Color broadcasts of operations to medical assemblies may be one step toward producing an electronic blackboard for all America to view.

On the other side of Alice's modern looking glass are the actors, directors, technicians, and a host of highly skilled helpers. Unlike the Red Queen's dilemma of running in order to stay where she was, these men make it possible to cover wide areas without leaving the studio.



DU MONT TELEVISION NETWORK PHOTOGRA

the United States, but the allocation was made because there had not yet been sufficient experimentation in the Ultra High Frequency band—the upstairs part of the spectrum—where there was additional room available. The Commission's report at that time stated:

". . . . The Commission is still of the opinion that there is insufficient spectrum space available below 300 megacycles to make possible a *truly nationwide and competitive television system.* Such a system if it is to be developed, must find its lodging higher up in the spectrum where more space exists and where color pictures and superior monochrome pictures can be developed through the use of wider channels. In order to make possible this development of television, the Commission has made available space between 480 and 920 megacycles for experimental television. The time which may elapse before a system can be developed to operate on wider channels on these Ultra High Frequencies is primarily dependent upon the resourcefulness of the industry in solving the technical problems that will be encountered. . . .

"The Commission repeats the hope expressed in its proposed report that all persons interested in the future of television will undertake comprehensive and adequate experimentation in the upper portion of the spectrum. The importance of an adequate program of experimentation in this portion of the spectrum cannot be over-emphasized, for it is obvious from the allocation which the Commission is making for television below 300 megacycles that in the present state of the art, the development of the upper portion of the spectrum is necessary for the establishment of a truly nationwide and competitive television system."

In the original plan, other radio services were permitted to share the thirteen channels on a non-interference basis. When this failed to work out satisfactorily, one channel was deleted and the remaining twelve channels were given to television exclusively. And those are the channels we have to-day.

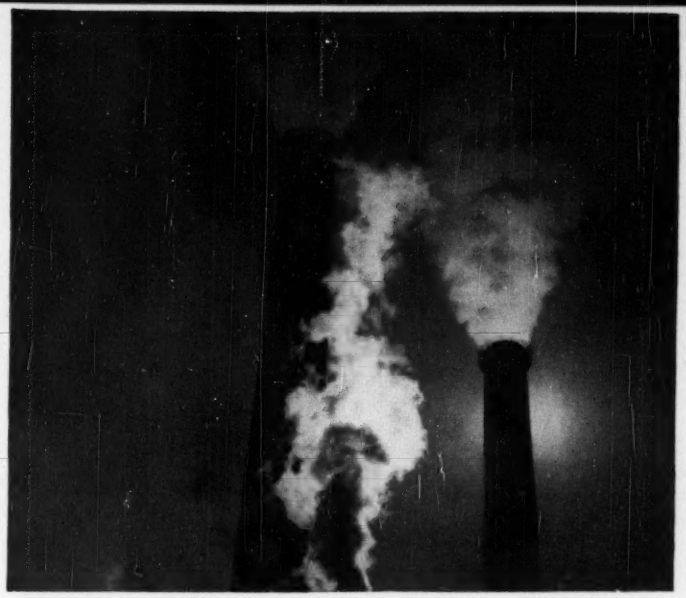
As more and more stations went on the air and as television seized the imagination of the American people and the television boom got under way, two growing pains developed. In the first place, television became so popular that the demand for a "truly nationwide and competitive system" became urgent even sooner than the Commission in 1945 had anticipated. The twelve channels were just too few to meet the demand for service. Some very heavily populated areas of the nation either had only one station or no station at all. And vast rural areas of the nation weren't destined to get any television service.

The other growing pain was the problem of interference. In 1945 the Commission had spaced the co-channel stations (stations on the same channel)

(Continued on page 41)

ACME PHOTOGR

"You're out!" Yes, they're all out—at the ball park, safely, comfortably, and conveniently. But there is more than just amusement here. There is medicine for the sick, information for the curious, commerce for the business man, and perhaps there will be color for all.



YOUR *Vanishing* PROFITS

DEVANEY PHOTOGRAPH

ALMOST as baffling as the smoke, the eerie lights, the shadows, and the phantoms produced by the magician's wand is the mysterious change in profits when the general price level rises or falls. But the conjurer's tricks are so simple when once explained. Here is a view behind the scenes of an important part of all business, with the lights on and the curtains up. Here is uncovered the trapdoor through which profits escaped as prices rose. Here, too, is an explanation of how that trapdoor works, what it does, and how it can be secured against further losses.

FREDERICK H. McDONALD
Consulting Engineer

IF YOU own stock in any business operating before World War II, you should find out if it has been kidding you on its profits. For it is estimated that over 96 per cent of the businesses of this country have been claiming profits that stockholders will never receive in money or equity.

The most gigantic hoax of our times is the so-called "profits" of American business—which are not profits, even though income taxes up to 40 per cent have been paid on them. Large chunks are being taken to replace worn-out machinery, equipment, and buildings, in spite of annual statements which swear that "all required depreciation allowances have been made" for replacements.

The joker is that "replacement allowances" are based on Original Costs before World War II—and every auditor, every executive and tax official knows that pre-war costs will not replace at our higher post-war prices. The result is that stockholders are being bled of the so-called profits to keep companies going, while Uncle Sam hangs on to the taxes he knows were not collected on real profits.

The tragedy is that most stockholders do not know they are being fooled and that the deception can be corrected. Yet, proof of these "false profits" is cropping out in the statements of many companies. For instance, the 1948 report of the West Virginia Pulp & Paper Company is typical in this statement:

"During 1948 'depreciation' covered only $3,823,000 of the $5,170,000 actually spent for plant replacement. The remaining $1,347,000 had to be taken out of so-called 'profits' . . . due to high prices of replacement. The record is the same for other years after the war."

How many stockholders realized that to have $1,347,000 in the profit account, West Virginia would have had to earn about $2,173,000 before taxes? From this it would have paid some $826,000 in taxes on earnings declared as profits, but which actually were—and had to be used as—deferred depreciation costs!

Such losses will continue everywhere as long as depreciation reserves are based on Original Costs. They will

continue as long as tax authorities and company officials disregard the experience of their eyes and act as if the cost of original purchase and the cost of replacing any physical asset after all the years it takes to wear it out will always be identical. Any school boy will say no!

Talk and Tears

Company officers will assert they have no choice—that Uncle Sam sets the depreciation allowances and names the profit. That can be admitted to a point, and still the question arises, "Do we live in Russia?" For while the present inequities have been of wide concern to corporations, to the accounting, engineering, and legal professions, and to trade and industry associations, so far there has been only discussion and lamentation. The American characteristic of straightforward action for the correction of an unhealthy condition seems waiting for something to happen—and we think for two reasons.

First, it appears to have been taken for granted by business men and tax authorities that the Internal Revenue Bureau cannot change from the use of Original Cost Depreciation except by action of Congress. Against that it can be held that the present Revenue Act allows the basing of depreciation on actual replacement costs, before taxes.

Second, has been the lack of a specific and routine method for shaping reserves to the market prices of replacements when due. For that, recommendations for Market Value Depreciation are presented. On these, frank reviews by independent authorities have been obtained and the result is offered with confidence in its workableness.

Fairminded people may point out that Original Cost Depreciation was an accepted accounting convention before the Federal Tax Commission was created in 1913 and that it was logically adopted by the Commission. Examination of the facts, however, will show that until 1909 the United States Supreme Court had twice refused to validate depreciation as an operating charge.

Therefore, from 1910 to 1913 there had been only three years of officially approved use of this charge in which to establish it as a so-called convention. Those were times of no income taxes and of relatively stable prices, with building costs for instance, varying only 4 per cent between 1910 and 1913. Certainly that was too short a period to reveal the hazards of Original Cost Depreciation, for no demonstrating replacements of durable goods could have become due by 1913 which had not been set up until 1909 or 1910. The "established custom" aspects of Original Cost Depreciation, quite obviously, have emerged since its adoption by the Internal Revenue Department.

Undoubtedly, the business losses from the use of this convention under the extreme price swings and high taxes of recent years would have led many companies to abandon it, had they felt themselves free agents. But the fact is that corporate policies and accounting practises in this nation—on any phase of operations affecting the determination of profits—are dictated by the regulations and views of Federal tax authorities. These have held to their custom of requiring Original Cost Depreciation, which increases taxes for Uncle Sam by creating a false profit base for much of the nation's business.

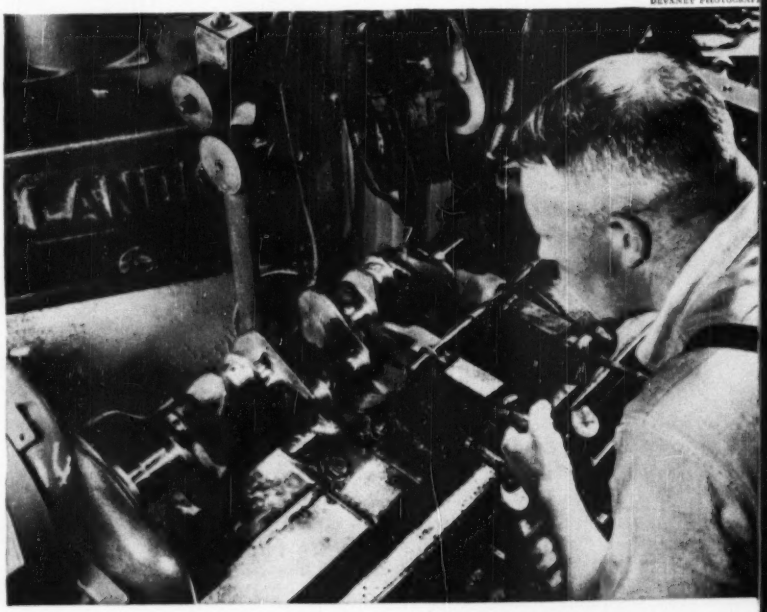
Relief will come from these facts. For custom has not been a sacred fetish to Americans when facts have proved it wrong. Witness the United States Supreme Court which as late as 1894 and 1898 held there could be no such thing as the accrual of a depreciation charge in addition to maintenance. Yet, in 1909, in the Knoxville Water Case, the Court reversed itself—and instituted a revolution in financial and accounting practises—by finding accrued depreciation a loss of value, recoverable from sales revenues. Facts again prevailed when in the past decade the Internal Revenue Bureau recognized the "last in, first out" principle of inventory pricing.

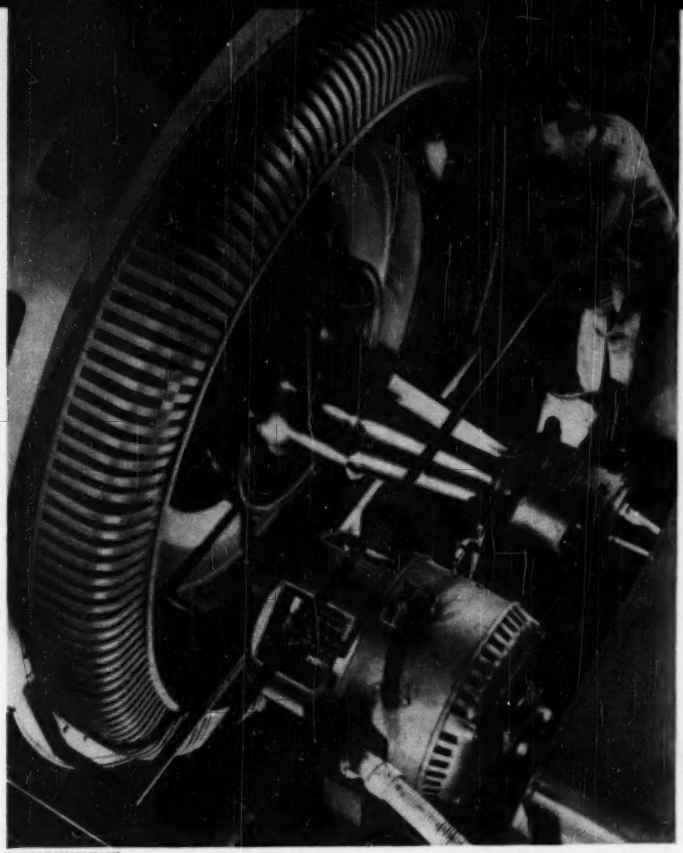
Thus, in Market Value Depreciation facts are resorted to in proposing adjustment of depreciation reserves periodically in anticipation of the market costs of replacements when due.

This is proposed as a lawful right of persons and corporations to guarantee the preservation of property, with the obligation of tax authorities to recog-

The wear and tear on tools and equipment often involve large outlays for the necessary replacements. Not only must more funds be expended to match the rising costs of new plants and equipment, but the methods of providing for such expenditures have imposed additional and not always apparent drains on company profits.

DEVANEY PHOTOGRAPH





DEVANEY PHOTOGRAPH

The balance that American industry requires for high-speed operations is, perhaps, symbolized by the humming generator. This balance can be maintained only if all the necessary parts are present and in good condition. When provisions are inadequate for replacements, it is inevitable that the productive processes will decline.

nize such procedure—voluntarily or at the direction of the courts—as an operating charge *before taxes*.

In support of this is the advice of legal counsel that:

1. The preservation of property against confiscation is a constitutional right.

2. The United States Supreme Court has stipulated that business property shall be preserved from earnings.

3. The Revenue Act provides that business property shall be preserved from earnings *before taxes*.

In assuming that prices are invariable, tax practise is grossly violating those three safeguards of equity and it is time they were restored.

The assumption of invariability, or even that there is a predictably equalizing force in prices, does not jibe with the record.

The fact is that experience and the history of prices prove that there never has been a time when the varying costs of material, transportation, and labor have ever been stabilized long enough to warrant the assumption that any unit of plant or equipment could be duplicated with certainty at identical costs over any continuous span of future years.

The proof of experience is ample. Try to build a hen-coop or a store, a motor or a blast furnace exactly like another someone else built five, twenty, or fifty years before . . . and duplicate the product and the price!

The proof of history lies in the comparison of Cost Indexes, computed from the record as nearly as humans can with accuracy. One of these is the *Engineering News-Record's* "Cost of Building Index," using the year 1913=100 as a base. From this authority come the following samples of the variations in yearly averages from before World War I, through the interval of wars, to the full impact of World War II's effects on prices:

Year		Aver. Index
1913	Pre-war, World War I	100
1920	Post-war, World War I, High	207
1932	Post-war, World War I, Low	141
1939	Pre-war, World War II	197
1945	Post-war, World War II	259
1946	" "	262
1947	" "	313
1948	" "	345

A Floor under Costs

Many people will say, "Oh, well, prices will fall eventually and 'even up' pre-war and post-war costs." Those persons should remember that the New Deal, the War, and militant-Labor have made *permanent* tax and payroll additions that freeze us on a higher plateau of costs. No matter how much prices may fall, from now on the costs of replacements will still be from 30 per cent to 100 per cent higher than before World War II and the problem of meeting those costs is everybody's.

All the evidence shows that we have cycles of prices, plus ups and downs within the cycles, that are as variable as the cycles of the seasons with their inside ups and downs of temperature. And the agencies of man have no more power to dictate a lack of variation for prices in an open market than to keep the thermometer from changing in the open air.

It can be safely concluded that it is impossible to guarantee that the need for replacing any physical asset at a distant date will coincide with a market price for replacement at the identical dollar of Original Cost.

To those who may be reluctant to change accustomed accounting practises, the point is urged that a more profitable procedure is being discussed, and that accountants recognize that accounting is but the financial record of business procedure. They are among the first to recommend profitable new procedure, and then set up the best way of accounting for its financial phases.

The extent to which accounting has to follow even erroneous business procedure is shown by the definitions of

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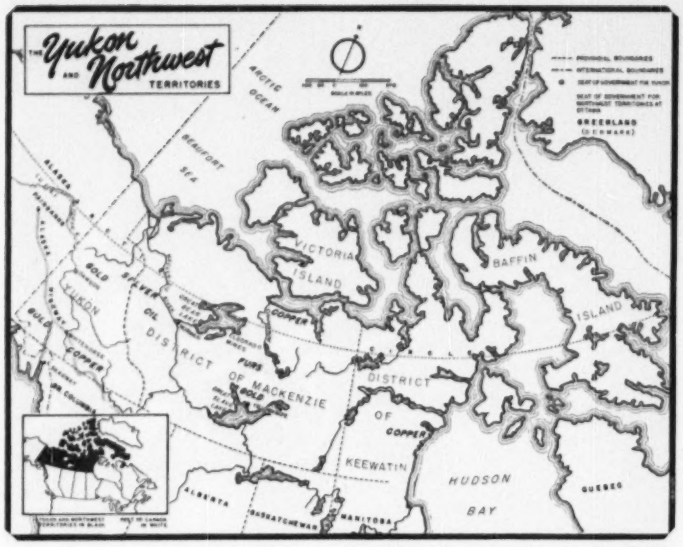


THE lights of a refinery glow in the Arctic night as oil is processed from a nearby field. Further east, men dig deep into the frozen tundra for uranium. Other natural resources of the Canadian Northwest include vast deposits of the common minerals, rich lodes of gold, millions of board feet of lumber, ample sources of hydroelectric power, and fertile farm lands.

"Down North": RAW MATERIALS FOR FUTURE MARKETS

C. M. SHORT

WHEN a fur trapper, a mining prospector, or a trader with a pack of knicknacks and gaudy clothes to barter for the furs of Indians and Eskimos sets out for the Canadian North he terms his direction "Down North." This is a land described by Robert W. Service as one "where the mountains are nameless and the rivers run God knows where."

At least a good part of this region is believed by some geologists to be the oldest solid formation of the earthly world. Once, hundreds of millions of years ago, it was in a warm, probably tropical, mass of air, luxuriant in vegetation and teeming with wild life. The remains of huge mammals and reptiles, which could have lived only in a jungle atmosphere, have been found hundreds of miles within the Arctic Circle. In the Ice Age the climate in the North changed from torrid to frigid.

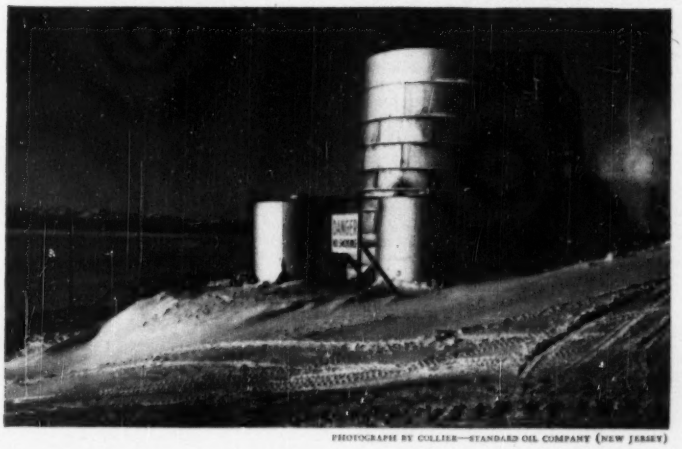
There it lay, locked in silence and uninhabited until some of the earliest of human beings, the progeny of the first American races, came to it. It was of no interest to the white race until the 16th century, when the great European nations, Britain, Spain, and France were struggling out of the Middle Ages and struggling against each other for the riches they believed existed overseas. They sought a short trade route to Cathay and the Indies, the empires of the East. Britain, under the rising ambition of the Elizabethan Age, struck out across the Atlantic in a search for the Northwest Passage. Frobisher and Davis discovered a vast inland sea which seemed to be the desired passage, and which Henry Hudson explored early in the 17th century. This sea bears the latter's name, Hudson's Bay.

In 1670 the "Governor and Company of Adventurers of England trading into the Hudson's Bay" was founded, and for more than 200 years this organization had administrative control of a region as large as the Continent of Europe, through which it established trading posts for its factors and exchanged goods for native furs to enrich the persons of Europe's merchant princes and the nobility.

The Hudson's Bay Company was not content with its trading area in and around its inland sea, nor with fur barter alone. Hearing reports from Indians of great lakes and rivers and

THE NATIONAL FILM BOARD PHOTOGRAPH

THE NATIONAL FILM BOARD PHOTOGRAPH



PHOTOGRAPH BY COLLIER—STANDARD OIL COMPANY (NEW JERSEY)

TOP *North America has its own source of uranium in the pitchblende dug at Eldorado Mine on Great Bear Lake inside the Arctic Circle. Here in the hold of a lake steamer are 100-pound bags of uranium concentrate awaiting shipment to the mining company's refinery in Port Hope, Ontario.*

CENTER *Rich lode gold deposits, located in 1938 at Yellowknife on Great Slave Lake, are worked extensively. Among the various gold-mining operations in this area is that of the Consolidated Mining and Smelting Company, Montreal, whose camp is seen from the deck of a tug boat.*

BOTTOM *The world's most northern oil field and refinery is Norman Wells on the Mackenzie River, operated by Imperial Oil Company, Ltd., affiliate of Standard Oil Company (New Jersey). From this field in World War II the U. S. Army built a pipe line to its refinery in White Horse.*

of native copper showings and precious metals westward of its operations, it sent some intrepid individuals overland. One of these, Samuel Hearne, trekked and paddled about 700 miles west to Great Slave Lake and 450 miles north to the Arctic Ocean. His search for rare metals was fruitless, but he made known part of the extensive waterway system of the Northwest. Later, Alexander Mackenzie made a hazardous trip down the great river which bears his name to the Arctic outlet. These two famous explorers opened up an unknown country of vast expanse and led the way "Down North," down the waterways which for more than a century were the major routes of transportation, with dog sled trails over the frozen wastes during the long, dark Winter season.

Klondyke Gold Rush

The Yukon was cracked open when the fabulous Klondyke gold field was discovered, a strike which attracted thousands of venturesome men and some daring women. Most of them went over the Trail of '98, from Skagway and up over the Chilcoot Pass, which took a heavy toll in injury and death of hundreds of the gold seekers, then "Down North," also along an extensive waterway system, to Dawson City, in some respects the most famous and notorious mining camp ever established. In a few years this camp was a well-organized community and served by the best methods of transportation then available, a narrow gage railway over the Chilcoot Pass to Whitehorse, where passengers and freight were picked up by river steamboats plying the long and intricate waterway system when it was ice-free. In Winter, horse-drawn sled stages operated on fairly regular schedules with overnight stops at roadhouses.

Some hardy spirits joined the Klondyke Gold Rush over an interior route, north from Edmonton, Alta., and through a trackless, rough country, much of it barren even of wild life. Few of those who took this long, perilous journey reached Dawson City, but those who did unwittingly blazed a trail for later and more modern forms of transportation, rail and air lines and the Alaska Highway.

The great railway building program in Western Canada in the closing part of the 19th century and early in the 20th extended hundreds of miles northward from Edmonton to open up the Peace River block, regarded as having good agricultural possibilities. In the 1930's the "bush pilots" moved in to provide airplane service, passenger and freight, even for mining machinery. Then "Cat" trains, Caterpillar tractors hauling strings of small box cars on runners, took over during the Winter from commercial dog teams.

The latter transportation development followed the discovery of uranium in economic quantities, richer in radium than ever had been found before, at Great Bear Lake well inside the Arctic Circle, and more than one thousand miles north of the nearest railway point. This discovery and subsequent operations gave North America its own source of uranium, broke the Belgian monopoly on radium, and provided cheaper and therefore more widespread cancer treatment. In 1938 rich lode gold deposits were located at Yellowknife, about 600 miles north of Edmonton, which have since been worked quite extensively.

It took Japan's slashing attack on the United States and her raids into the North Pacific to give the Canadian North and Alaska a prominence they had never had before. Almost immediately it was realized that large defence measures would have to be taken to protect Canada and the United States from a "back-door" onslaught upon them. The first projects undertaken jointly by the two countries were the further development of airways and the construction of a comparatively safe overland supply route.

Alaska Highway Built

New landing fields were constructed, some of major proportions. The one at Edmonton served not only as a base for American-Canadian Air Forces, but, also, as a transfer point for the American bombers turned over to Russia. There, Russian pilots flew the planes to Siberia and the western war front. The most spectacular job was the construction of the Alaska Highway, from a railhead at the Peace River town of Dawson Creek, British Columbia, to Fairbanks, Alaska, a distance of over 1,500 miles, mainly through Canadian forest and mountain wilderness.

Other undertakings included the development of known oil wells, a pipe line to Whitehorse, and the construction there of an oil refinery. Most of the expenditures, hundreds of millions of dollars being involved in all these measures, were met by the United States. After the war, however, Canada arranged to reimburse the United States for all military establishments of permanent value, and to maintain and improve the Alaska Highway. There are, therefore, still in existence strategic bases and complementary resources "Down North" which though under Canadian control, are available for the joint defense of North America.

This northern region is now recognized as one of great natural wealth, for peaceful as well as martial purposes. Measuring over a million square miles, it includes barren as well as productive and potentially productive areas. Moreover, the natural wealth varies considerably both in composition and degree. (The next four paragraphs are based on a report, *Canada's New Northwest*, by the North Pacific Planning Project, Ottawa.)

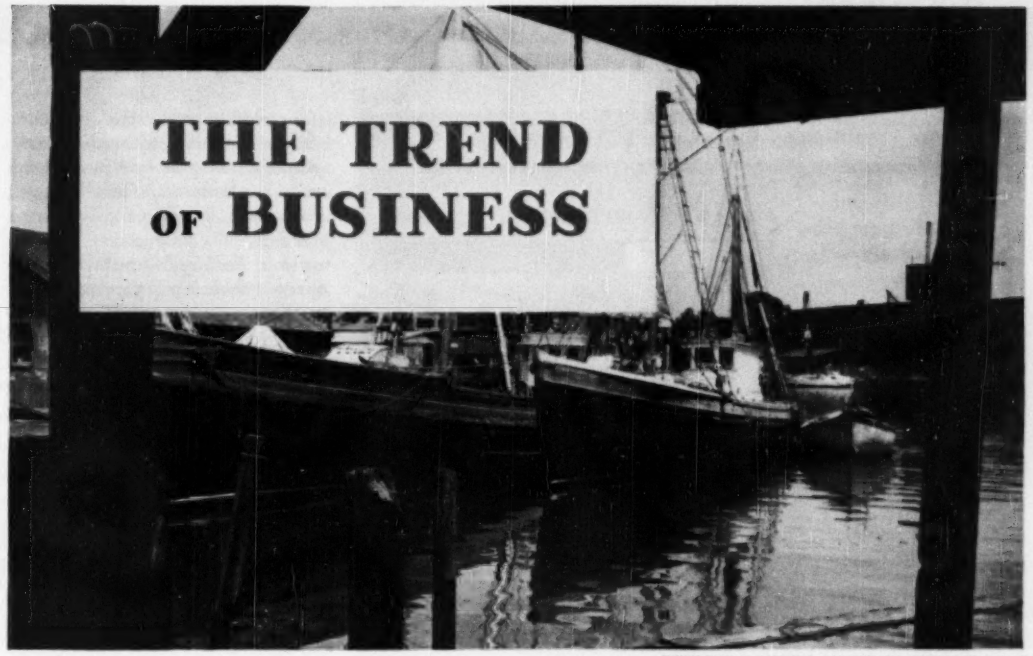
There are two well-defined agricultural zones, the southern and the northern. The southern is mainly in the Queen Charlotte Islands of the North Pacific and in, and adjacent to, the Peace River block. The Islands are heavily timbered and land clearing and drainage are therefore expensive operations, but, with soil and climatic conditions quite similar to those of Den-

(Continued on page 52)

Rushed to completion as a military road to supply troops in Alaska and Alaskan and Canadian airfields, the Alaska, or Alcan Highway was built in six months time in 1942. Ten thousand soldiers and 2,000 civilian employees worked on it under the direction of the United States Army Corps of Engineers. Mapped largely by aerial reconnaissance and pushed through vast stretches of wilderness, the 1,523-mile highway spans 200 streams. This all-weather road, 24 feet between ditches, was constructed at the rate of 8 miles a day.

THE NATIONAL FILM BOARD PHOTOGRAPH

THE TREND OF BUSINESS



FISHING BOATS AT GLOUCESTER, MASSACHUSETTS—DEVANEY PHOTOGRAPH

Further expansion in the production of durable goods more than offset the chiefly seasonal declines in non-durable output which occurred in May and the first half of June. Unemployment diminished considerably as employment rose. The near-peak levels of personal income helped to sustain consumer buying. The dollar volume of new construction was at a record high.

MANUFACTURING activity was close to record levels during May and the first half of June. The unprecedentedly high levels of construction and steel and automobile output more than balanced the moderate retrenchments effected by some producers of non-durable goods.

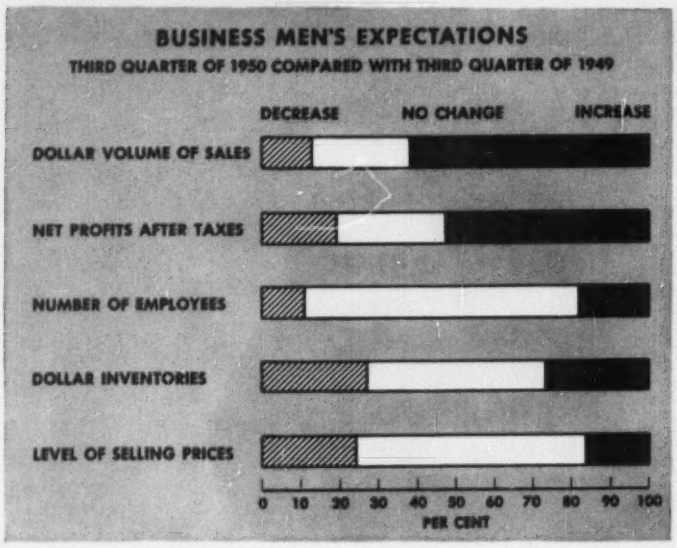
Many business men enlarged their plans for purchasing new plant and equipment. A revised report issued jointly by the SEC and the Commerce Department placed third quarter 1950 expenditures for new facilities at $4.5 billion, 3 per cent more than in the same period a year ago. By the end of September 1950 some $12.7 billion will have been spent for new plant and equipment, or about 6 per cent less than the corresponding 1949 volume. Earlier estimates had reflected that spending for new plant and equipment in this period would be 11 per cent below that in 1949.

Total construction put in place in May, valued at almost $2 billion, exceeded the seasonal peaks which had been reached in the Fall of 1948 and 1949. This record level of building was more than 20 per cent above that in May 1949; it was expected to continue at a similar rate in June. Construction volume for the first five months of 1950 amounted to slightly more than $8 billion.

Although the exceptionally high level of building continued to require large quantities of lumber, ordering dropped off slightly in May. In the latter half of May, lumber production exceeded new orders for the first time this year. While both the weekly output and shipments of lumber started to decline slightly, they remained above the corresponding 1949 levels. Weekly lumber production in May averaged about 224 million board feet; it was 5 per cent above that in April and nearly 10 per cent above a year ago.

Steel production was sustained at peak levels during May and the first half of June in response to the unusually high demand. Most steel mills were sold out for months ahead. Steel output in the week ended June 17 exceeded 1.9 million tons for the seventh consecutive week.

While steel industry observers expected very high production to continue well into the latter part of the year, it was generally agreed that the need for repairs to production equipment would necessitate some curtailments in the near future from the peak pace. Steel output may also be reduced by the July vacation schedules.



An impressive majority of the 1,220 executives interviewed in May by DUN & BRADSTREET, INC., regarding their prospects for the third quarter of 1950 expected their dollar sales and net profits to equal or exceed the similar 1949 levels.

It was anticipated by 46 per cent of the respondents that the dollar level of inventories would be unchanged; the remaining 54 per cent were evenly divided in expecting either an expansion or a contraction of inventories. Only 17 per cent of the executives expected an increase in the level of their selling prices; the majority felt that there would be no change in the level of prices for their products. The median percentage changes expected are included in the table below.

CHANGE FROM THIRD QUARTER 1949 TO THIRD QUARTER 1950 (MEDIANS)

	All Concerns %	Mfrs. %	Whol. %	Ret. %
Dollar Volume of Sales.....	+3.8	+4.7	+2.9	+3.1
Net Profits, after Federal Taxes.....	+2.1	+2.5	+1.3	+2.1
Number of Employees*.....	+0.5	+1.0	+0.1	−0.2
Dollar Value of Inventories*	−0.3	−0.2	−0.6	−0.3
Level of Selling Prices*....	−0.2	−0.3	−0.1	−0.2

* End of Sept. 1950 compared with the end of Sept. 1949.

Weekly Signposts of Activity

Weekly Averages 1939	1949	Selected Business Indicators	Latest Week	Previous Week	Year Ago	Week Ended
102	150	Steel Ingot Production (Ten Thousand Tons)	193	193	160	June 24
76	82	Bituminous Coal Mined (Hundred Thousand Tons)	130	101	108	June 10
69	120	Automobile Production (Thousand Automobiles)	194	192	140	June 10
31	66	Electric Power Output (Ten Million K.W. Hours)	59	56	53	June 10
65	69	Freight Carloadings (Ten Thousand Cars)	80	71	81	June 10
109	285	Department Store Sales (Index Number)	302	261	288	June 10
77	155	Wholesale Prices (Index Number)	157	157	156	June 10
74	212	Bank Debits (Hundred Million Dollars)	189	225	181	June 3
76	275	Money in Circulation (Hundred Million Dollars)	270	271	274	June 14
219	178	Business Failures (Number of Failures)	178	164	196	June 15

Sources: Amer. Iron & Steel Inst.; U. S. Bureau of Mines; Automotive News; Edison Electric Inst.; Amer. Assoc. of Railroads; Federal Reserve Board; U. S. Bureau of Labor Statistics; DUN & BRADSTREET, INC.

The weekly production of automobiles averaged somewhat over 162,000 vehicles in May as compared with nearly 140,000 for each week in April; it was about 43 per cent above that in May 1949. The production of cars and trucks in the first five months of 1950 averaged about 135,885 each week; at an annual rate this would amount to nearly 7.1 million vehicles. The all-time high of last year was 6.2 million.

The Federal Reserve Board estimated that its Index of Physical Production would be at 191 per cent of the 1935-1939 average level in May, only 4 points below the record level of 195 attained in October and November 1948, and the highest index since January 1949.

The Production Index has risen since March, reflecting chiefly the increased output of iron and steel, automobiles, and machinery. The strong demand for producers' equipment, coupled with the sustained high demand for household appliances boosted the production of machinery substantially.

Employment As a result of the near-record levels of business activity, employment increased again in May for the fourth successive month. According to the Census Bureau, there were 59.7 million persons at work in May, a gain of over a million from April, and the highest number since August 1949. A lag in the demand for farm workers kept total employment from passing the 60-million mark for the first time since the Summer of 1948.

Significant gains in construction and a pick-up in factory work lifted the total non-agricultural employment to almost 51.7 million workers in May, substantially above the 1949 average and approximately at the level prevailing in the peak year 1948. This was accomplished despite the transfer of some workers from non-farm to farm work and the withdrawal from the labor force of women who had held temporary seasonal jobs in retail trade.

Although there was a seasonal increase of 900,000 jobs in agriculture be-

tween mid-April and mid-May, total farm employment, at about 1.8 million, remained well below the corresponding 1949 level. Inclement weather in many areas this Spring retarded farm operations.

Unemployment declined by about 500,000 for the third consecutive month; the total number of jobless was at 3.1 million, the lowest figure since April 1949. For the first time this year unemployment was no longer above that in the corresponding month in 1949. There were, however, about 1 million more jobless this May than in May 1948.

Income The nation's 11.6 million production workers earned a record average weekly pay of $56.89 in April, slightly more than the $56.53 in March and more than $3 above that in April 1949. It was the fifth time in as many months that average weekly earnings in manufacturing had increased. The rise was attributed to lengthened work weeks in some of the durable goods industries; the largest increases in overtime occurred in the transportation equipment and primary metals industries.

The rise in weekly earnings in durable goods manufacturing was partially offset by a decline in the non-durable goods industries due chiefly to seasonal reductions in the work week. Weekly hours worked declined in all of the non-durable goods lines except the rubber and the petroleum and coal products industries. However, both the length of the work week and the weekly earnings remained well above April 1949 levels.

Total personal income, disregarding the special payments to veterans from the National Service Life Insurance Fund, was at an annual rate of $212.8 billion as compared with $212.2 billion in March. The NSLI dividend payments declined in April to $345 million from $887 million in March. By the end of April only 10 per cent of the total $2.8 billion veterans' dividend had yet to be paid out.

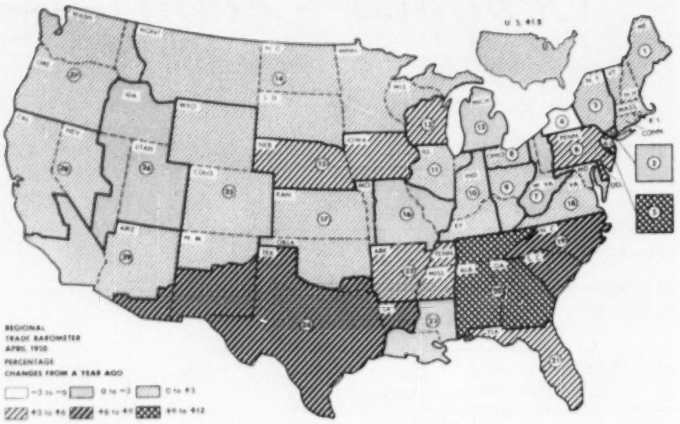
Reflecting the increased activity in the durable goods industries, total wage

Compass Points—

	Year	Average For First Five Months	Jan.	Feb.	Mar.	Apr.	May
Employment, total	1948	57.7	57.1	57.1	57.3	58.3	58.7
Million persons	1949	57.7	57.4	57.2	57.6	57.8	58.7
	1950	57.9	56.9	57.0	57.6	58.7	59.7
Unemployment	1948	2.2	2.1	2.6	2.4	2.2	1.8
Million persons	1949	3.1	2.7	3.2	3.2	3.0	3.3
	1950	4.0	4.5	4.7	4.1	3.5	3.1
Farm Income	1948	2.1	2.6	1.9	1.9	2.1	2.1
Billion dollars	1949	2.0	2.4	1.7	2.0	1.9	1.9
	1950	..	2.3	1.6	1.7	1.6	
Consumers' Credit Outstanding	1948	14.0	13.1	13.1	13.5	13.8	14.0
Billion dollars	1949	15.8	15.7	15.3	15.3	15.6	15.8
	1950	..	18.3	18.1	18.3	18.6	
Hourly Earnings of Industrial Workers	1948	1.31	1.30	1.31	1.31	1.31	1.32
Dollars	1949	1.40	1.41	1.40	1.40	1.40	1.40
	1950	..	1.42	1.42	1.42	1.43	
Weekly Earnings of Industrial Workers	1948	52.75	52.86	52.58	52.92	52.56	52.83
Dollars	1949	54.66	55.50	55.20	54.74	53.80	54.08
	1950	..	56.44	56.37	56.53	56.89	
Manufacturers' Sales	1948	18.5	18.2	18.5	18.8	18.6	18.6
Billion dollars	1949	18.2	19.1	18.2	18.5	17.6	17.7
	1950		17.6	18.0	19.1	18.3	
Manufacturers' Inventories	1948	31.5	30.0	30.3	30.7	31.0	31.5
Billion dollars	1949	33.6	34.4	34.4	34.2	34.0	33.6
	1950	..	31.1	31.1	31.1	31.1	
Wholesalers' Sales	1948	8.3	8.3	8.2	8.4	8.4	8.2
Billion dollars	1949	7.6	7.7	7.7	7.9	7.4	7.5
	1950	..	7.2	7.6	7.7	7.3	
Wholesalers' Inventories	1948	8.8	8.7	8.7	8.7	8.8	8.8
Billion dollars	1949	9.2	9.5	9.5	9.3	9.3	9.2
	1950	..	9.0	9.0	9.2	9.1	
Retailers' Sales	1948	10.7	10.6	10.6	10.8	11.0	10.6
Billion dollars	1949	10.7	10.6	10.7	10.7	10.8	10.8
	1950	11.0	10.9	11.1	11.1	11.0	11.1
Retailers' Inventories	1948	14.1	13.7	14.0	14.3	14.2	14.1
Billion dollars	1949	14.1	14.7	14.5	14.7	14.5	14.1
	1950	..	14.0	13.9	14.0	14.3	
Physical Production Index	1948	191	193	194	191	188	191
Adjusted 1935-1939=100	1949	183	191	189	184	179	174
	1950	186	183	181	187	189	191
Freight Carloadings	1948	3.4	3.8	3.1	3.0	3.0	4.4
Millions of cars	1949	3.0	2.8	2.8	3.3	3.1	3.1
	1950	2.8	2.4	2.3	3.4	2.9	3.0
Building Permits, 120 Cities	1948	251	233	191	264	286	279
Million dollars	1949	236	188	195	256	283	257
	1950	345	269	282	357	355	464
Commercial and Industrial Failures	1948	416	356	417	477	404	426
Number	1949	750	566	685	847	877	775
	1950	848	864	811	884	806	874
Liabilities of Failures	1948	17.0	13.0	25.6	17.5	15.3	13.8
Million dollars	1949	28.1	19.2	27.6	37.2	31.9	24.6
	1950	24.1	26.4	22.2	27.9	21.3	22.7

The figures above bring up-to-date some of the series included in "The Compass Points of Business" quarterly supplement to the May issue of DUN'S REVIEW. The next complete quarterly supplement will appear in the August issue of this magazine.

Regional Trade Activity



REGIONAL TRADE BAROMETERS FOR 29 REGIONS

(1935-1939=100)

Region:	Apr. 1950	% Change from Apr. 1949	% Change from Mar. 1950
United States	309.4	+ 1.8	+ 3.8
1. New England	234.4	+ 1.4	— 0.7
2. New York City	241.0	— 1.5	— 1.0
3. Albany, Utica, and Syracuse	272.5	+ 1.3	— 0.4
4. Buffalo and Rochester	295.2	— 3.2	+ 10.4
5. Northern New Jersey	230.5	+ 9.2	+ 3.6
6. Philadelphia	288.8	+ 3.4	+ 0.5
7. Pittsburgh	281.2	— 0.4	+ 4.6
8. Cleveland	295.5	+ 0.9	— 0.7
9. Cincinnati and Columbus	318.6	+ 1.7	+ 4.3
10. Indianapolis and Louisville	338.4	+ 0.3	— 1.6
11. Chicago	274.8	+ 1.1	— 0.9
12. Detroit	315.1	— 0.2	— 5.5
13. Milwaukee	320.3	+ 3.0	— 3.6
14. Minneapolis and St. Paul	292.1	+ 1.7	— 1.8
15. Iowa and Nebraska	322.4	+ 4.0	+ 2.7
16. St. Louis	277.9	— 0.1	— 3.2
17. Kansas City	321.4	+ 1.4	— 2.7
18. Maryland and Virginia	291.1	+ 2.7	+ 3.1
19. North and South Carolina	354.5	+ 6.8	+ 11.1
20. Atlanta and Birmingham	431.6	+ 10.8	+ 5.4
21. Florida	373.6	+ 5.0	+ 12.0
22. Memphis	356.8	+ 4.7	— 6.1
23. New Orleans	366.3	— 2.9	— 1.0
24. Texas	440.2	+ 6.9	+ 8.5
25. Denver	300.4	+ 2.9	+ 0.3
26. Salt Lake City	338.6	— 2.0	+ 4.7
27. Portland and Seattle	344.7	+ 2.0	+ 0.3
28. San Francisco	317.0	+ 1.6	— 0.3
29. Los Angeles	318.5	+ 2.1	+ 1.3

and salary receipts rose to an annual rate of $136.7 billion, some $1.8 billion above the March level. A contra-seasonal decrease in livestock marketing receipts was chiefly responsible for the reduction in farm income during April; the net income of farm operators in the first four months of 1950 was about 20 per cent below that in 1949.

Prices The prices of a variety of industrial and farm products advanced somewhat in May and the first half of June. The Dun & Bradstreet Wholesale Commodity Price Index was at 266.14 on June 1, compared with 256.41 a month earlier. The minor fluctuations in the index which occurred during the first two weeks of June did not reflect an appreciable change in the general level of prices; the index was at 266.19 on June 12.

There was a fractional rise in the Bureau of Labor Statistics' Consumers' Price Index between mid-March and mid-April. The index was 167.3 (1935-1939=100) on April 15. While this was 1.4 per cent below the level of a year ago, it was more than 25 per cent higher than in June 1946, and nearly 70 per cent above the level of August 1939.

Finance Although the volume of shares traded on the New York Stock Exchange during May was well below the April level, it was the largest May volume in two years. Stock prices rose for the eleventh consecutive month; the Dow-Jones industrial stock price average was 219.36 for May, up almost 7 points from April and slightly more than 45 points above the May 1949 level. While the average has risen consistently for almost a year, it is still a long way from the all-time high of 381.17 reached on September 3, 1929.

Retailing Traditional June promotions for weddings, graduations, and Fathers' Day met with favorable consumer response in most parts of the nation. Retail dollar volume was slightly above that of June a year ago.

Shoppers manifested increased interest in Summer apparel items. There was a considerable amount of off-season buying of furs. Gift purchases of women's and men's accessories exceeded last year's levels.

Although consumer purchases of television sets and major household appli-

Industrial Production

Seasonally Adjusted Index. 1935-1939=100. Federal Reserve Board

	1947	1948	1949	1950
January	189	193	191	183
February	189	194	189	189
March	190	191	184	187
April	187	188	179	189
May	185	187	174	191†
June	190	192	169	
July	176	186	166	
August	182	191	170	
September	186	192	174	
October	191	195	176	
November	192	194	177	
December	192	191	177	

†Approximation; figure from quoted source not available.

Employment

Millions of Persons. U. S. Bureau of the Census

	1947	1948	1949	1950
January	55.4	57.1	57.5	56.9
February	55.5	57.1	57.2	57.0
March	56.1	57.3	57.6	57.6
April	56.7	58.0	57.8	58.7
May	57.3	58.2	58.2	59.7
June	60.1	61.3	59.6	
July	60.1	61.6	59.7	
August	59.6	61.2	59.9	
September	58.9	60.3	59.4	
October	59.2	60.5	59.0	
November	58.6	59.9	59.5	
December	57.9	59.4	58.6	

Includes all civilian workers.

Wholesale Commodity Prices

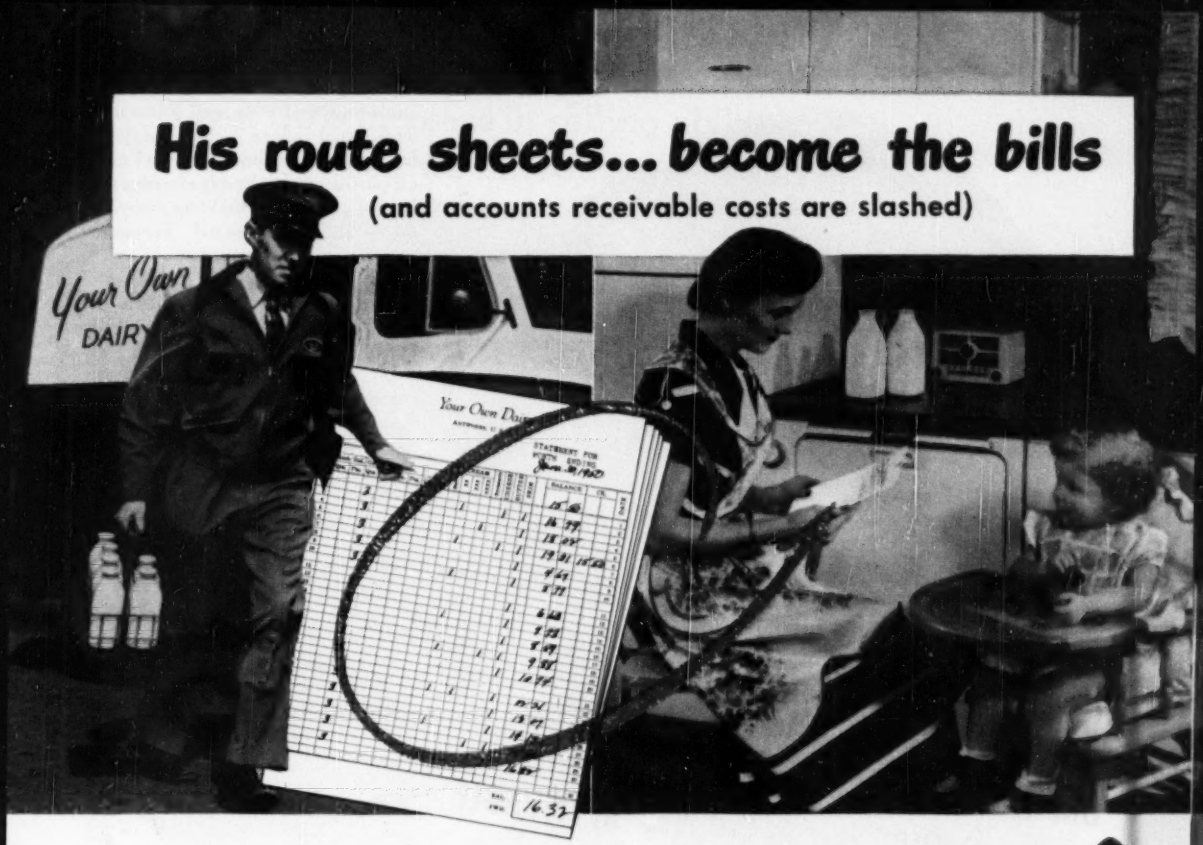
Index. 1926=100. U. S. Bureau of Labor Statistics

	1947	1948	1949	1950
January	142.0	165.9	160.6	151.6
February	145.2	165.0	158.1	152.7
March	150.0	164.6	155.4	154.7
April	148.0	163.0	156.9	152.9
May	148.2	164.2	155.1	153.5†
June	147.7	166.4	154.5	
July	150.6	168.8	153.6	
August	153.7	169.8	153.0	
September	157.4	168.9	153.7	
October	158.5	165.4	152.2	
November	159.6	164.0	151.6	
December	163.2	162.4	151.1	

†Approximation; figure from quoted source not available.

His route sheets... become the bills

(and accounts receivable costs are slashed)



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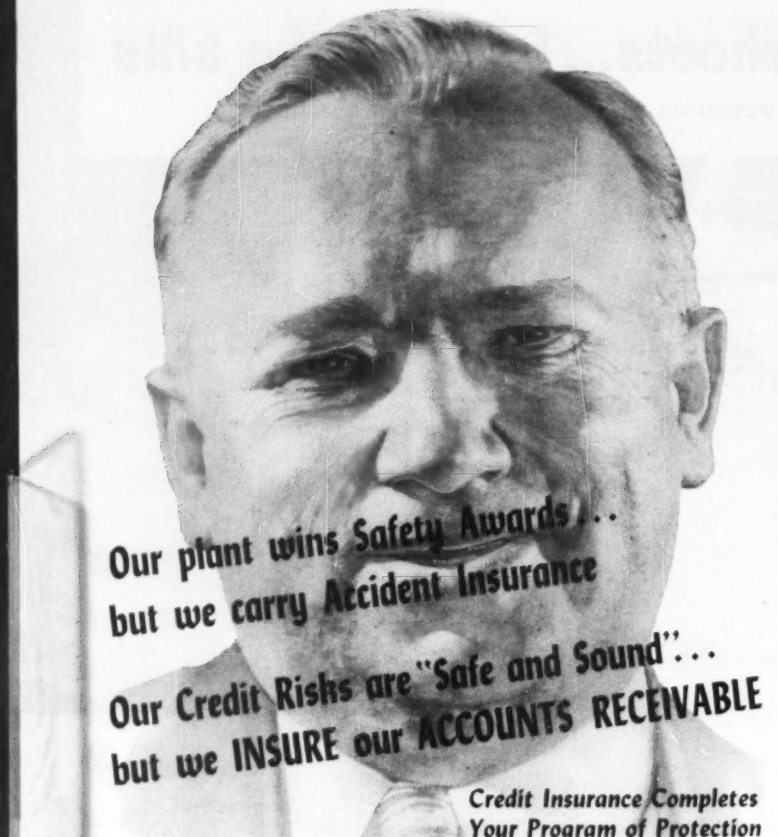
Our plant wins Safety Awards...
but we carry Accident Insurance
Our Credit Risks are "Safe and Sound"...
but we INSURE our ACCOUNTS RECEIVABLE
Credit Insurance Completes
Your Program of Protection

CREDIT INSURANCE is just as necessary to your program of protection as fire, theft and other business insurance. Credit losses can be just as large and just as serious as other losses.

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GUARANTEES PAYMENT OF ACCOUNTS RECEIVABLE

OFFICES IN PRINCIPAL CITIES OF UNITED STATES AND CANADA

ances continued to be well above 1949 levels, retail volume in these categories fell somewhat in June. New and used car purchases considerably exceeded the level of a year ago. Building materials remained in large demand. Furniture sold in increased quantity.

Wholesaling By the middle of June merchants had placed a large volume of orders for Fall delivery. Reorders for Summer merchandise had become increasingly prevalent. The dollar value of June orders moderately exceeded the 1949 level.

Shipments were received on schedule except in some construction material and automotive lines. Delivery dates were moved further into the future than in recent months, although orders remained on a shorter-term basis than in most pre-war years. Cancellations were fewer than a year ago.

Buyers placed a slightly larger dollar

(Continued on page 32)

Industrial Stock Prices

Monthly Average of Daily Index, Dow-Jones

	1947	1948	1949	1950
January	176.19	176.26	174.75	199.70
February	181.34	168.47	174.46	204.46
March	176.66	169.04	175.87	206.30
April	171.28	180.05	175.05	212.67
May	168.67	186.38	174.03	209.36
June	173.76	191.05	169.59	
July	183.51	187.05	173.14	
August	187.[illegible]	181.[illegible]	179.[illegible]	
September	181.92	180.13	180.[illegible]	
October	181.92	185.19	180.47	
November	181.42	176.80	191.54	
December	179.18	176.41	196.58	

Based on closing prices of 30 industrial stocks.

Consumers' Price Index

Index 1935-1939=100, U. S. Bureau of Labor Statistics

	1947	1948	1949	1950
January	155.3	168.3	170.9	166.9
February	155.2	169.3	170.1	168.3
March	156.3	166.9	169.5	167.0
April	157.[illegible]	169.3	169.7	167.3
May	156.0	170.5	169.2	168.2†
June	157.1	171.7	169.6	
July	158.4	171.7	168.5	
August	160.3	174.5	168.8	
September	163.8	174.5	169.6	
October	164.8	173.6	168.5	
November	164.9	172.2	168.6	
December	167.0	171.4	167.5	

†Approximation, figure from quoted source not available.

BANK CLEARINGS

(Thousands of dollars)

	May		%
	1950	1949	Change
Total 24 Cities	29,021,098	25,710,698	+12.9
New York	32,536,345	29,433,788	+10.5
Total 25 Cities	61,557,443	55,144,486	+11.5
Average Daily	2,459,902	2,205,791	+ 7.0

NEW BUSINESS INCORPORATIONS

GEOGRAPHICAL REGIONS	Apr. 1950	Apr. 1949	Four Months 1950	Four Months 1949
New England	534	488	2,142	1,910
Middle Atlantic	2,829	2,351	12,168	10,024
East North Central	1,431	1,226	5,716	5,036
West North Central	442	411	1,720	1,574
South Atlantic	1,112	1,087	4,586	4,058
East South Central	260	249	1,113	960
West South Central	594	503	2,349	1,908
Mountain	518	354	1,277	970
Pacific	855	704	3,310	2,718
Total U. S.	8,575	7,273	34,361	29,178

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● "Quite apart from its efficiency as a dictating machine, AUDOGRAPH in sales training has improved the selling ability of our agents by over 30%," says Mr. George Curtis, Reservations Chief for American Airlines at Boston, Massachusetts.

● The friendly, accommodating "Voice With the Sell," which air travelers out of Boston associate with American Airlines' reservation agents, starts with a unique system of sales training . . . and the AUDOGRAPH Electronic Soundwriter.

Doubling in brass, as both a dictation and a training instrument for American Airlines, the AUDOGRAPH handles routine office correspondence quickly, conveniently, and economically . . . and develops effective selling technique to cope with the flood of calls which pour into "Reservations" by phone twenty-four hours a day.

Your business—no matter what type, or size—can immediately increase office and personal output with the efficient system of business communications which AUDOGRAPH makes possible. Write *today* for the full facts or, better still, just mail the coupon.

Made by The Gray Manufacturing Company—established in 1891—originators of the Telephone Pay Station.

Gray
AUDOGRAPH ELECTRONIC SOUNDWRITER

AUDOGRAPH sales and service in 180 principal cities of the U. S. See your Classified Telephone Directory—under "Dictating Machines". Canada: Northern Electric Company, Ltd., sole authorized agents for the Dominion. Overseas: Westrex Corporation (export affiliate of Western Electric Company) in 53 foreign countries.

● THE GRAY MANUFACTURING COMPANY, HARTFORD 1, CONNECTICUT

● Send me Booklet X-7—"Now We Really Get Things Done!"

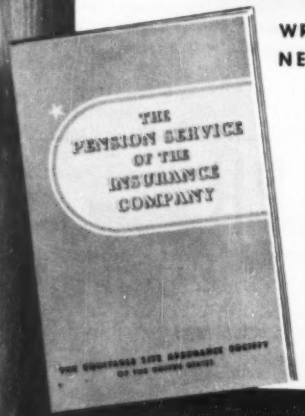
● Name .....

● Title ..... Firm .....

● Street ..... City .....

PENSION PLANS geared to the particular needs of YOUR company

	FORM OF CONTRACT
PLAN 1	**GUARANTEED DEFERRED ANNUITIES** The annual pension credit for every employee on the payroll is fully purchased and guaranteed. Past service credits are purchased for employees in age-order over a period of years.
PLAN 2	**FULLY FUNDED DEPOSIT ADMINISTRATION** Equitable estimates amounts needed to finance benefits of plan. Contributions are accumulated at interest in a fund from which annuities are purchased as employees retire.
PLAN 3	**NON-CONTRIBUTORY FLEXIBLE FUNDING DEPOSIT ADMINISTRATION** Annuities purchased as employees retire, with any degree of advance funding desired by employer.



WRITE FOR THIS NEW BOOKLET

EACH OF THESE THREE PLANS PROVIDES

- Complete relief from investment responsibility. Pension fund merged with Equitable's total assets thereby sharing fully in Equitable money-management.
- Low handling charges.
- Money not needed for benefit payments, expenses, and contingencies—returned in dividend payments based on individual case-experience.

DESIGNED FOR	ADVANTAGES
Companies that want maximum safeguards in funding. Available to groups of about 50 or more employees.	1. This is the only method which assures complete discharge of each year's obligations. 2. In event of sale or merger of the company or discontinuance of the plan, all pension credits to date are guaranteed. 3. Guaranteed rates assure a ceiling on pension cost.
Companies that want a wide choice in determination of benefit formula and flexibility in funding. Available to groups of 1,000 or more employees.	1. Valuable guarantees on interest rates and annuity rates. 2. An independent accredited actuary if desired, may be employed to recommend size of contributions. Lower contributions than required under Plan 1 will be accepted. 3. Guarantee of income to retired employees.
Companies adopting the type of plan currently resulting from collective bargaining. Available in cases in which annual contributions amount to at least $15,000.	1. Complete flexibility as to plan provisions, and amount of advance funding. 2. Guarantee of income to retired employees. 3. Continuous actuarial counsel by The Equitable.

As the originator of Group Insurance with more than 20 years' experience in sound pension planning—The Equitable Society has the facts and the know-how vital to any pension discussion.

THE EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES

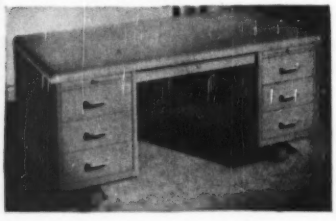
THOMAS I. PARKINSON · PRESIDENT

393 SEVENTH AVENUE • NEW YORK 1, NEW YORK

The Desk of A Successful Man . . .

His company is alert and knows that good executives merit every working convenience and knows, too, that a fine desk multiplies executive ability. Because of CRESTLINE's practical, built-in efficiency, planned-work design and unmatched appearance, his company selected the CRESTLINE "66" by Security for this successful executive.

Why not write now for the CRESTLINE Desk & Table folder and see how CRESTLINE's wide range of sizes, styles and finishes make them the perfect choice for all your offices.



MSF-66 CRESTLINE Flat Top Desk

Crest LINE

SECURITY STEEL EQUIPMENT CORP., AVENEL, N. J.

A LINE TO BUILD ON Security STEEL

volume of orders for apparel than in the previous month. Buyer interest continued to be centered chiefly on hard goods; television, building materials, and furniture predominated.

Barometers Retail buying fell 1.2 per cent in May, according to the seasonally adjusted DUN'S REVIEW Regional Trade Barometer. The May barometer of 305.6 (preliminary) was 2.1 per cent above the 299.3 of a year ago. The barometer, based on the 1935-1939 average, is also adjusted for the number of business days in the month.

The final barometer for April of 309.4 indicated slight increases from both the previous month and a year ago. It was the highest barometer since the 311.3 which occurred in July 1948.

Monthly changes varied from a drop of 5.3 per cent in the Detroit Region (12) to a rise of 12.0 per cent in the Florida Region (21). Changes from a year ago ranged from a drop of 3.2 per cent in the Buffalo and Rochester Region (4) to an increase of 10.8 per cent in the Atlanta and Birmingham Region (20).

Failures Business failures rose 8 per cent in May, following their decline in April to reach a total of 874. Casualties were at a post-war high for a month of May, but were

Retail Sales

Billions of dollars, seasonally adjusted. U. S. Department of Commerce

	1947	1948	1949	1950
January	9.2	10.6	10.6	10.9
February	9.4	10.6	10.5	11.1
March	9.5	10.8	10.7	11.1
April	9.5	11.0	10.8	11.0
May	9.8	10.6	10.7	11.1†
June	9.8	10.9	10.7	
July	9.9	10.9	10.5	
August	9.9	11.0	10.6	
September	10.5	11.0	10.8	
October	10.5	10.9	10.6	
November	10.5	10.8	10.6	
December	10.6	11.0	10.5	

† Approximation; figure from quoted source not available.

WHOLESALE FOOD PRICE INDEX

The index is the sum total of the price per pound of 31 foods in general use. It is not a cost-of-living index.

Latest Weeks		Year Ago		1950	
June 13..	$5.94	June 14..	$5.68	High June 6..	$6.00
June 6..	6.00	June 7..	5.73	Low Jan. 3..	5.73
May 30..	5.94	May 31..	5.74	1949	
May 23..	5.90	May 24..	5.74	High Jan. 4..	$6.12
May 16..	5.89	May 17..	5.66	Low Oct. 11..	5.57

DAILY WHOLESALE PRICE INDEX

The index is prepared from spot closing prices of 30 basic commodities (1930-1932=100).

Week Ending:	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
June 17..	266.19	265.46	264.87	263.84	264.47	264.50
June 10..	266.04	266.08	267.77	267.69	267.66	267.07
June 3..	264.73	Holiday	265.74	266.14	265.49	265.94
May 27..	262.20	262.22	263.06	263.29	262.81	263.13
May 20..	261.02	260.66	261.09	261.54	261.58	261.67

Our Brand is COMPTOMETER

REG. U. S. PAT. OFF.

ADDING-CALCULATING MACHINES

We don't aim to string up any cuss who forgets it—but Comptometer is always spelled with a CAPITAL C. And it can't be used except on *our* amazingly speedy, accurate, easy-to-operate Adding-Calculating Machines!

(Even in Texas!)

Made only by Felt & Tarrant Manufacturing Co., Chicago, and sold exclusively by its Comptometer Division, 1722 N. Paulina St., Chicago 22, Ill.

R. H. ALLEN & SON

A New Star in the Commander Line-Up!

Mm-m-m-m---uh! Pretty slick.

Yes, and you'll give three rousing cheers when you use your first sheet of No. 531 . . . newest addition to Columbia's Commander Carbon Paper line-up. Especially if you're using an electric typewriter, you will discover that Commander 531 will turn in the grandest performance of any carbon you have ever tried.

Commander 531 is a firm carbon with a new, crisp, attractive impression. You'll be thrilled at its cleanliness, both in handling and in the copies. It erases beautifully . . . doesn't curl. You can make up to seven copies with Commander 531, and it has the same money-saving, long-wearing qualities which are characteristic of all Commander carbons. For special uses, Commander 531 produces the kind of work desired by accountants and executives who want copies with original-like clarity and dignity.

If that isn't enough to get you enthused about Commander 531, the only thing for you to do is try it—free! Use the coupon below and we will send you a generous folder of samples—no charge—no obligation.

COLUMBIA RIBBON & CARBON MFG. CO., Inc.
Main Office & Factory:
137 Herb Hill Road, Glen Cove, L. I., New York
New York Sales and Export: 58-64 West 40th Street
Branch Offices and Distributors in Principal Cities
Consult your local Telephone Classified Directory

Commander Carbon is made in three weights—4, 5 and 7 pound paper. The 4 and 7 pound papers are made in three different finishes, and the 5 pound paper in four finishes. 531 is the hardest finish. Finishes 34, 40 and 43 range from sharp to medium intense.

COLUMBIA
Commander
CARBON PAPER 531

COLUMBIA RIBBON & CARBON MANUFACTURING CO., Inc.
137 Herb Hill Road, Glen Cove, L. I., N. Y.

Please send me free samples of COMMANDER Carbon Paper No. 531

Size_____ x _____

Name_____

Position_____

Company_____

Address_____

City_____ Zone_____ State_____

not as numerous as in March this year. While failures increased 13 per cent from the 1949 level and 105 per cent from 1948, they fell 34 per cent below the pre-war total of 1,334 in May 1939.

The mortality rate, as reflected in DUN'S FAILURE INDEX which projects the monthly casualties to an annual basis and adjusts for seasonal variation, advanced to 35 per 10,000 enterprises in operation from 33 both in the preceding month and a year ago. This rate was only one-half as sharp, however, as in 1939 when 70 concerns succumbed for every 10,000 in business. The May casualties involved liabilities of $22.7 million, a larger volume than in April.

THE FAILURE RECORD

	May 1950	Apr. 1950	May 1949	P. Ct. Chge.†
DUN'S FAILURE INDEX*				
Unadjusted	37.6	36.0	34.9	+ 8
Adjusted, Seasonally	35.5	33.0	33.2	+ 7
NUMBER OF FAILURES	874	806	775	+ 13
NUMBER BY SIZE OF DEBT				
Under $5,000	197	172	157	+ 25
$5,000–$25,000	450	416	374	+ 20
$25,000–$100,000	186	169	201	— 8
$100,000 and over	41	49	43	— 5
NUMBER BY INDUSTRY GROUPS				
Manufacturing	197	195	202	— 3
Wholesale Trade	109	93	101	+ 8
Retail Trade	426	398	351	+ 21
Construction	80	76	63	+ 27
Commercial Service	62	44	58	+ 7
	(Liabilities in thousands)			
CURRENT	$22,672	$21,250	$24,583	— 8
TOTAL	22,856	21,500	24,620	— 7

* Apparent annual failures per 10,000 enterprises, formerly called DUN'S INSOLVENCY INDEX.
† Per cent change of May 1950 from May 1949.

FAILURES BY DIVISIONS OF INDUSTRY

(Current liabilities in thousands of dollars)	Number Jan.-May 1950	Number Jan.-May 1949	Liabilities Jan.-May 1950	Liabilities Jan.-May 1949
MINING, MANUFACTURING	993	945§	1,044	3,382
Mining—Coal, Oil, Misc.	12	35	6,862	7,049
Food and Kindred Products	110	97	7,801	6,748
Textile, Products, Apparel	208	145	5,173	10,653§
Lumber, Lumber Products	160	161§	1,021	3,878
Paper, Printing, Publishing	51	42	3,742	642
Chemicals, Allied Products	23	27	990	1,174
Leather, Leather Products	35	42	1,473	649
Stone, Clay, Glass Products	28	23	2,884	5,674
Iron, Steel, and Products	58	65	5,058	15,102
Machinery	115	127	5,058	15,102
Transportation Equipment	24	30	1,208	3,511
Miscellaneous	180	161	6,519	7,822
WHOLESALE TRADE	528	467	18,679	19,438
Food and Farm Products	132	133	5,811	5,918
Apparel	21	24	657	861
Dry Goods	8	11	202	277
Lumber, Bldg. Mats., Hdwr.	61	46	3,074	1,703
Chemicals and Drugs	19	35	514	857
Motor Vehicles, Equipment	32	29	764	985
Miscellaneous	255	199	7,657	8,737
RETAIL TRADE	2,028	1,708	37,429	30,011
Food and Liquor	412	374	4,850	4,807
General Merchandise	114	73	3,185	755
Apparel and Accessories	366	243	7,390	4,647
Furniture, Furnishings	203	209	4,285	4,456
Lumber, Bldg. Mats., Hdwr.	120	116	2,577	1,976
Automotive Group	200	160	3,721	3,043
Eating, Drinking Places	351	302	7,352	6,561
Drug Stores	50	39	791	747
Miscellaneous	212	192	5,278	3,019
CONSTRUCTION	380	324	10,079	10,330
General Bldg. Contractors	117	129	3,984	5,427
Building Sub-contractors	244	180	5,807	2,796
Other Contractors	19	15	288	1,616
COMMERCIAL SERVICE	310*	306*	7,703*	14,235*

§ Revised.
* The Failure Record from 1945 to date has been revised to exclude all railroad failures; data is now comparable with years prior to 1945 when railroads were not included.

"One lump or two ?"

When it comes to figuring which of these Sahara station wagons is preferable, we'll confess even a Monroe won't help. But for every other figuring or accounting problem, we'll shout this fact from camel, horse, or piggy-back: Monroe's your answer! For simplicity, for efficiency—yes, even for comfort! And that, Effendi, goes for *all* figure problems. For by the beard of the Prophet, whatever your figure need, Monroe makes the model to meet it.

Whatever your figuring job is Monroe makes the model to do it

Monroe CALCULATING Machine

NEW MODEL CSA! The very latest type fully automatic has just the features required for the economical handling of all your general business figure work.

Monroe ADDING Machine

RHYTHM-ADD! Operators rave about the effortless speed of Rhythm-add, give credit to Monroe design, "Velvet Touch"* keyboard, and glareless cushion-top keys.

Monroe ACCOUNTING Machine

VERSATILE! A multi-purpose bookkeeper that handles several kinds of jobs. Like all Monroes, its "Velvet Touch"* is one reason operators who know prefer Monroe.

*"VELVET TOUCH" originated in 1535 to describe Monroe's matchless ease of operation.

Every Monroe is sold only through Monroe-owned branches; serviced by Monroe's factory-trained organization.

MONROE *MACHINES FOR BUSINESS*

Monroe Calculating Machine Company, Inc., General Offices, Orange, N. J.

The Business Bookshelf

HUMAN ACTION, *by Ludwig von Mises. Yale University Press, 889 pages, $10.*

SAVING AMERICAN CAPITALISM, *ed. Seymour Harris. Alfred A. Knopf, 373 pages, $3.*

THE underlying controversy of our time—economic freedom vs. central planning—is at rock bottom an inevitable historic process working out the dislocations created by modern industrial conditions. This basic fact is often obscured by the soap-box pratings of advocates of either side; the "Welfare" State, "selfish interests," and similar verbal cross-volleys emit much smoke, but little of the fire of true understanding. It is therefore a heartfelt relief to receive, in the recent offerings of Dr. von Mises and Dr. Harris, expositions of both viewpoints containing a minimum of polemics and a maximum of clear-cut, objective scholarship.

The von Mises book, subtitled *A Treatise on Economics,* combines a mass of theory with a leaven of readability. It is, in essence, a refreshing restatement of classical liberalism in the light of present tendencies.

Training his sights upon such current practises as deficit spending, public ownership, and progressive taxation, the author makes plain their fundamental incompatability with the free market. His logic is as disciplined as it is devastating. Where other critics of "new-dealism" resort to name-calling, he painstakingly traces each "heresy" from its origin in political expediency to its conclusion in economic suicide; where others appear hypersensitive to charges of negativism and reaction, von Mises boldly proclaims the right of unrestrained enterprise as the sole means of freeing the spirit of man from its work-a-day fetters.

Reminiscent of Herbert Spencer is his reduction of all neo-liberal measures to the common denominator of "interventionism." Does regulation inexorably drag down the mighty without correspondingly elevating the meek? To this final query *Human Action* sounds a "Yea" both loud and clear.

While Harris' study also makes ample use of theoretical formulations, its emphasis rests decidedly on the observable and measurable practises of the contemporary American business scene. It is this essential difference in presentation that spells an almost polar divergence in attitude between the two writers. In simplest terms, it's a case of what *ought* to be as against what *is.*

Saving American Capitalism is composed of a series of essays edited and integrated by Dr. Harris, and offers selections by himself and 23 other members of the "New Deal fraternity," including Chester Bowles, Leon Keyserling, and A. M. Schlesinger, Jr. Each essay is built around the thesis that *laissez faire* liberalism, whatever were its past merits, has long since ceased existing in fact. The alternative, as one contributor puts it, "is not between planning and no planning, but between democratic planning and autocratic planning." We must work within the framework of joint government and private ownership; only in this way can "the essentials of capitalism—consumer's sovereignty of choice, freedom to invest, and the liberty to choose occupations" be preserved.

The suggested means of attaining this goal is divided into various areas of concentration, the two most important being the planned development of resources and the stabilization of demand. State intervention is envisioned as a counterweight to private industry: restraining its excesses in the interest of the consumer, stimulating its healthy growth with positive programs of expansion. Much space is devoted to monetary policies, purchasing power, and methods of control; rates of production and expenditure are shown in a well-formulated series of charts and tables.

THE ECONOMIC EFFECTS OF ADVERTISING *by Neil H. Borden. Richard D. Irwin, Inc., 1,025 pages, $7.50.*

An analysis of thousands of case histories backed up by exhaustive field work has gone into what is probably the most exacting study of the impact of advertising on the total economy written in recent years.

Here at last are unassailable facts that help to clear up the controversy of whether advertising ultimately raises or lowers consumers' prices. Many other age-old questions involving demand-measuring for individual prod-

CURRENT READING

BOOK	*SUMMARY*
CASE HISTORIES OF SUCCESSFUL ADVERTISING METHODS, by *Printers' Ink* Editors and Contributors. Funk & Wagnall's, 296 pages, $4.75.	21 well-chosen examples of just what the title says; selected by those who should know.
MAKING WORK HUMAN, by Glen U. Cleeton. Antioch College Press, 326 pages, $3.75.	Taking the "sting" out of one's job is the theme of this authoritative tome on personnel relations.
BUSINESS CYCLES AND FORECASTING, by Elmer C. Bratt. Richard D. Irwin, Inc., 584 pages, $6.	A revised third edition of this all-inclusive book on the history and analysis of a popular subject. One interesting section discusses proposals for artificial control of cyclical movements.
UNIONS AND CAPITALISM, by Charles E. Lindblom. Yale University Press, 276 pages, $3.75.	A non-partisan approach to the problem of organized labor; the author concludes that the aims of unions and of management are ultimately incompatible.
A DICTIONARY OF ECONOMICS, by Harold S. Sloan and Arnold J. Zurcher. Barnes & Noble, 268 pages, $3.	Business, financial, and commercial terms in current usage are explained and defined in alphabetical order.
THE COMMERCE OF NATIONS, by John B. Condliffe. W. W. Norton & Co., 884 pages, $7.50.	War, peace, and the encroachments of collectivism are all placed in significant perspective in this history of foreign trade.

ucts, advertising ethics, and similar topics are covered. Numerous tables and charts provide both source material and illustrations of the text.

Mr. Borden, a staff-member of the Harvard Business School, has also compiled a 300-page condensation of the above, *Advertising in our Economy*. Popularly written, this book contains all the salient material from the original volume, and should appeal to those not familiar with advertising terminology.

MEAT AND MAN, *by Lewis Corey. Viking Press, 377 pages, $4.50.*

Some years ago Upton Sinclair shocked polite folk out of their easy-chairs with the revelations in his best-selling novel *The Jungle*. Conditions in the murderously-competitive meat industry were scandalous; empires were being built upon the labor of spent lives and human wreckage. The situation, happily, is now changed; among the many agencies responsible for this change must be included the workmen's own fraternal organizations, the trade unions.

One of these unions, the Amalgamated Meat Cutters (AFL), suggested to Mr. Corey that he survey the industry in its present stage of development. The results of this task, incorporated into *Meat and Man*, are both instructive and encouraging. The author, certainly no "company man," sees the gradual emergence of enlightened managements whose primary aim is to co-operate fully with responsible unions in the public interest.

There is also an examination of the quasi-monopolistic character of some sections of the meat industry, where the hazards of price-fixing and other restrictions are explored.

INCOME TAX TREATIES, *by Albert A. Ehrenzweig and F. E. Koch. Commerce Clearing House, Inc., 384 pages, $15.*

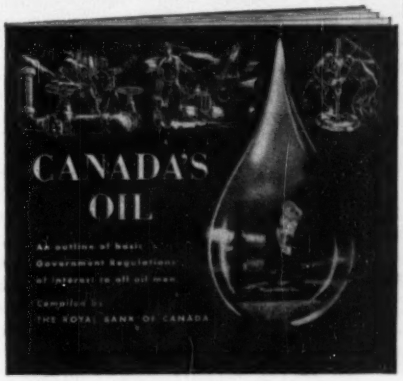
Of vital concern to those in exporting and of more than passing interest to legal students of world trade, this current release is a thorough-going account of some latest developments in the brand-new field of international taxation. The scholarly text is lucid and cross-indexed. Included are drafts of tax conventions between this country and the United Kingdom.

Canada's Oil...

A new brochure has been prepared by The Royal Bank of Canada, "Canada's Oil Bank," to provide basic information for oil men interested in Canada's oil fields. It is factual, comprehensive and up-to-the-minute.

Here are the important subjects covered in this new brochure—

- **Leases and Reservations**
- **Conservation and Proration**
- **Immigration**
- **Minimum wages and holidays with pay**
- **Business operations in Canada**
- **Taxation**
- **Tariffs and Customs Regulations**
- **Foreign Exchange Control**
- **Western Canada Petroleum Association**



Maps of Western Canadian oil fields, showing locations of The Royal Bank branches, are also contained in the book.

Copies are available on request to the Advertising Department, Head Office, Montreal. Please write on your business letterhead.

Ask the Royal about Canada's Oil

57 branches in Alberta, the "oil" province. Over 730 branches in Canada, the West Indies, Central and South America, New York, London and Paris.

Head Office, Montreal
Assets exceed $2,334,000,000

THE ROYAL BANK OF CANADA

HERE *and* THERE . . . *in Business*

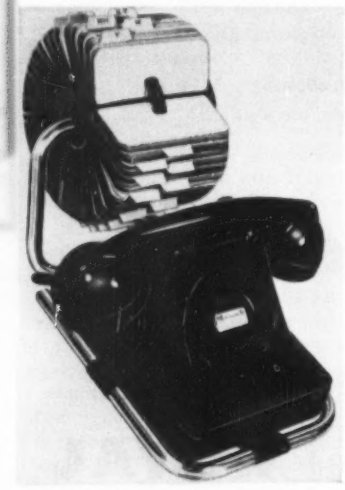
NEW EQUIPMENT OR METHODS DESIGNED TO EXPEDITE INDUSTRIAL PRODUCTION OR TO REDUCE CLERICAL LABOR, FACILITATE THE MERCHANDISING OF NEW PRODUCTS, OR TO PROVIDE SAFER AND BETTER WORKING CONDITIONS FOR INDUSTRIAL AND COMMERCIAL EMPLOYEES.

Electric Typing—How the "Electriconomy Test," developed by Remington Rand, Inc., enables a business man to evaluate electric typewriters in his own office before he invests in new equipment is presented in the new motion picture, *Keys to Electric-conomy*.

The film likewise dramatizes the advantages of electric typewriters in turning out quantity carbons, cutting stencils, and reducing fatigue for workers.

The 27-minute, 16 mm. sound motion picture may be obtained for free showing from any Remington Rand office. The sponsor invites its presentation by all users of office typewriters as well as by business men's clubs, office methods groups, and schools.

Box Cars—Larger capacity and a variety of cargo-protecting features are included in a new type of box car available from the General American-Evans Company, Chicago.



Virtually no extra desk top space is required for a new wheel card file produced by the Wheeldex Manufacturing Company. The file, containing 1,000 cards in loose leaf arrangement, is supported by a tubular stand which accommodates a rectangular base telephone.

The car has special high-speed, shockproof trucks, a cushioned underframe to afford protection to car and cargo in road service and switching, a nailable steel floor, a design providing for a stiffer superstructure and more rigid sides; wide doors, and a 50-foot length as against the more conventional 40-foot.

A special loading device increases the pay load and decreases dunnage. This consists of eight rails mounted one above the other on each side of the car. Cross beams may be attached at any point on these rails to provide support for partial loads of any size or shape. They likewise may be used for installing bulkheads or multiple deck arrangements which permit full loading with segregation of any part of the load.

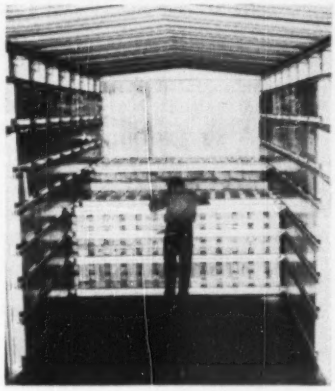
A leasing system under which these cars are being made available is enabling the participating railroad lines to take advantage of this new form of freight carrier without assuming the financial burden that would be involved in the purchase and maintenance of such a fleet.

Freight Elevator—A self-supporting electric elevator introduced by the Otis Elevator Company provides a low-cost installation for all types of businesses which require vertical freight transportation but do not need heavy duty elevators.

With a vertical rise of 35 feet, sufficient for a three-story building, the new Otis elevator is made in three standard sizes of 1,500, 2,000, and 2,500 tons capacity.

Installed as a complete unit in a new or existing hoistway, the elevator requires only 11 feet of headroom above the top floor landing, eliminating the need for a penthouse on top of the building for the electric motors and other operating equipment.

As the elevator supports itself, no heavy strain is placed on the building.



Parallel rails extending along each side of the box car facilitate the installation of bulkheads and multiple deck arrangements.

Powder Metallurgy—Non-porous powdered metal parts, which may be plated or machined, are molded in processes developed by the American Electro Metal Corporation, Yonkers, N. Y.

This company, manufacturing a variety of powdered metal parts for private industry and the Armed Services, was founded and is headed by Dr. Paul Schwarzkopf. The latter is a pioneer in powder metallurgy with the Yonkers firm and the Metallwerk Plansee, Reutte, Austria, one of the largest powder metallurgy companies in Continental Europe.

The "Sinteel" process subjects minute particles of metal to extremely high hydraulic pressures and subsequently to temperatures sufficient to fuse them into a porous mass. Alloys then are infiltrated into the metal skeleton to cement the whole into one continuous alloy structure.

Metals having a high melting point, such as iron or steel, are bound together with metals having a low melting point. For most of the ferrous metals the bonding agent usually is copper.

Containing up to one-third copper, one powdered metal structure de-

veloped by this company is "Sinteel-G." It consists of a sintered (baked) steel compact whose every pore is filled with the copper base alloy. Sinteel-G is said to have yield, tensile, and elastic properties matching the carbon steels. Due to its copper content it is self-brazing (capable of being brazed without flux), permitting intricate parts to be made by simply stacking up simpler ones.

As the American Electro Metal Corporation has found a way of molding steel at a lower pressure, it is possible to make sintered pieces weighing as much as 20 pounds. This permits the use of simpler dies, manufactured at lower cost.

Comdr. Thomas E. Smith (A.T.S. Ret.), project development engineer for the American Electro Metal Corporation, reports that this organization's processes for sintering metals have been found most advantageous for the manufacture of gears, compressor blades, bearings of various types, magnetic pole pieces, and parts for guided missiles, guns, water seals, automobiles, washing machines, business machines, communications equipment, and lawn mowers. A bearing can be made either porous or non-porous depending on whether it is to be self-lubricating or carry heavy loads.

High strength parts formerly were considered to be outside the realm of powder metallurgy from a mass production point of view. The manufacture of jet engine compressor blades offered the greatest challenge because of the close tolerances to which they have to be coined. Formerly all such blades had to be made by the lost wax process, by forging, or machining.

As sintered blades require only slight machining (on the base supporting the blade), little waste of metal results.

Blue Denim—Enclosed in a cover jacket of blue denim is the current report of the Kansas City Fire and Marine Insurance Company. The sturdy jacket was chosen to symbolize the company's thinking and planning, dramatizing the fact that it is tackling its job in its "work clothes."

The report itself is attractively printed in three colors and illustrated with thumbnail sketches, photographs of company activities, and charts.

Last year the company partially re-

Our truck dispatcher was getting over $20,000 a year—but we didn't know it!

(Based on Hartford Claim #127763)

We operate a cartage service, making pickups and deliveries for companies that don't have their own trucks. Often our drivers collect C.O.D.'s, and they turn in the money to our dispatcher who sets up the accounts on it for our cashier. We had a very capable man in this dispatching job whom we were paying about $4500 yearly. But that wasn't enough for him and his taste for gambling and high life. He began to hold back some of the C.O.D. collections and juggle the accounts. In less than a year, before the shortages became so great he couldn't conceal them any longer, he got away with $16,000! Fortunately we had a $10,000 Fidelity Bond with the Hartford which we collected in full to partially make up our loss. This experience proved to us that *all* employees should be bonded *and for an adequate amount!*

• • •

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corded its annual report on the two sides of a 10-inch phonograph record which it enclosed in a conventional album labeled "Your Company's Record for 1948" (see DUN'S REVIEW, September 1949, page 37).

Lithographed Drums—A company's brand name, trade mark, and other packaging information now may be lithographed in any number of colors and in fine detail on containers ranging from the smallest can or pail up through the 55-gallon drum.

The "Rheemcote" process, instituting multi-color lithography and other significant improvements in the production of the 55-gallon barrel, also known in the trade as the 400-pound grease drum, was engineered by the Rheem Manufacturing Company, New York, makers of steel shipping containers. The new versatility for heavy drums offers widespread application in the packaging and merchandising of oils, chemicals, foods, and other products. Such drums already are being turned out in commercial quantities in Rheem's New Orleans plant.

Formerly the biggest container which could be lithographed was the 100-pound grease drum, holding a little less than 15 gallons. The company name and other information either was stenciled on the larger containers, applied by means of a silk screen, or stamped on with rubber dies.

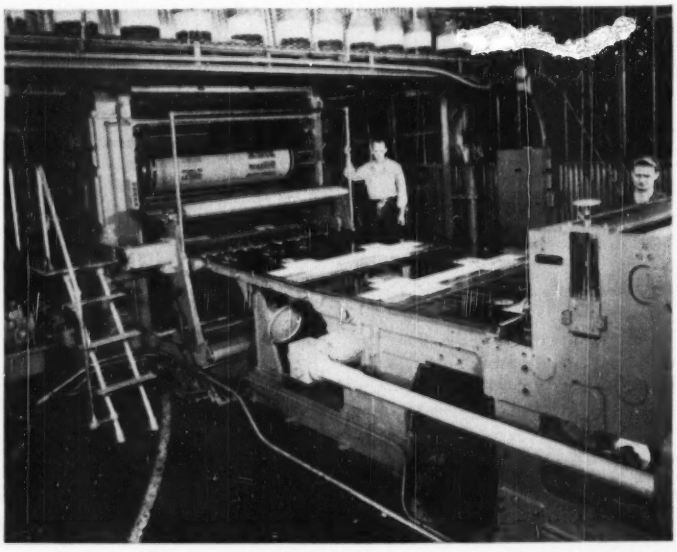
A key factor in the Rheemcote process is a new printing press built by R. Hoe & Company, New York. Now exclusively used by Rheem, the press later will be generally available to the trade. This press prints colors individually on 50 by 72-inch sheets of 18-gage steel (approximately 1/20th of an inch thick and weighing about two pounds to the square foot) at a rate of 4,200 sheets—more than 75 tons—per hour for each color.

Before being lithographed the sheets pass through a roller coater which applies the base color and a lining of uniform thickness, in cases where drums are to be lined for corrosion resistance or for sanitary purposes. Rheem engineers worked in the plant of the Wagner Litho Machinery Company, Jersey City, in evolving the roller coater and the drying oven.

The heads and bottoms of the Rheemcote drums are stamped out of sheets which already have been lithographed. The dies are kept highly polished so as not to mar the finish.

Brand new is the principle of lining a drum before the container is formed. Previously, the lining was sprayed on after the drum was built.

The world's largest metal lithography press now permits the lithographing of 55-gallon steel drums, opening up new possibilities in the packaging and merchandising of oils, chemicals, and foods.



TELEVISION

(Continued from page 16)

150 miles apart and adjacent channel stations 75 miles apart. This was done largely because the radio industry urged that seven stations were needed in large metropolitan districts like New York. By squeezing the stations this closely together, the Commission could assign more stations in more cities, a highly desirable step in view of the limited number of channels in the Very High Frequency or downstairs portion of the spectrum. As these stations went into operation, however, it developed that a phenomenon known as tropospheric interference was carrying the signals farther than had been anticipated and that these stations were too close together. This caused interference which seriously threatened to degrade television service in many areas.

Faced with these two technical problems, the Commission began a public hearing in September of 1948 to determine what mileage separation would be required to eliminate the tropospheric interference in the Very High Frequency band and the feasibility of utilizing the Ultra High Frequency band to provide additional stations.

At that point, more than 100 stations had been granted construction permits. In addition, more than 300 applications for permits to construct were pending before the Commission. The Commission ordered its now celebrated "freeze" into effect. It stopped issuing permits for any new construction although it permitted stations already authorized to be completed. To-day we have 350 television applications pending.

A group of engineers from the Commission, the Bureau of Standards, and industry spent several months studying the Very High Frequency interference problem and in 1949 the Commission proposed a plan which would locate co-channel stations 220 miles apart and adjacent channels 110 miles apart (as compared with the existing 150-mile and 75-mile separations). I believe that this will give us a virtually interference-

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free service in the Very High Frequency band.

In the hearing that has been in progress intermittently since September, 1948, the Commission is also receiving testimony from the nation's foremost electronic scientists on the feasibility of utilizing 42 channels in the hitherto unused Ultra High Frequency band to supply badly needed additional stations. We don't know as much as we would like to know about this upstairs region, but we do have at hand data on some experimentation and also some scientific data from military wartime operations. I believe that moving into this new region is a reasonably safe risk.

Wider Market

These 42 channels would assure virtually every city in America of 20,000 population and over at least one television station. Most large cities could have four or five stations, thus assuring us of the competitive kind of television that we require if this new medium is to provide us with a diversity of programming that we ought to have.

And now we come to the subject of much current interest—color.

The current investigation into color television is not the first the Commission has conducted. Back in 1946, the Commission in a public hearing studied systems demonstrated by the Columbia Broadcasting System and the Radio Corporation of America. The systems proposed channel widths between twelve and sixteen megacycles. The Commission rejected color at that time.

By September 1948, however, the Commission received reports that indicated that progress had been made in developing a color television system using only six megacycles—the same channel width as for black and white. It appeared, therefore, that since color and black and white could use the same megacycle channel width, it might be feasible to employ the Ultra High Frequency band as well as the Very High Frequency band for color as well as black and white.

The knotty problem of color, of course, has complicated and lengthened our hearing. It has meant delaying the day when we could order the lifting of the "freeze" and has thereby further delayed the resumption of television construction throughout the country.

However, the other horn of the dilemma is this: if the Commission authorized the present black and white transmission standards in the new Ultra High Frequency region and later discovered that a suitable color system would not work in conjunction with the present black and white engineering standards, then it would be faced with a major changeover, a costly upheaval at some later date in order to accommodate color—if we were ever to have color.

We are in the position of a nation that is faced with the problem of laying out tracks for a vast new railroad system. We must make sure now that the tracks will be of the right gage and will fit the locomotives and cars that we want to run over them in the future. We can also liken our problem to the lock and key relationship.

Rather Be Right . . . .

This, if ever, is the time to make haste slowly.

First of all, we must establish beyond the shadow of a doubt, on the basis of sound engineering research, that a color system actually will work satisfactorily on a six-megacycle channel.

Second, we must determine what kinds of interference and propagation characteristics color systems will have. We must eliminate picture distortion and other types of unsatisfactory reception. It is possible that color transmission requires different conditions from black and white transmission. If it can operate under somewhat the same conditions, our problem is simplified. If it can't, we might have to have different mileage separations between the stations that are broadcasting color.

Three concerns have demonstrated their color systems before the Commission and the parties in the proceedings. A word about each.

Columbia Broadcasting System: Works well and produces pleasing color pictures. Uses a mechanical filter wheel. This must be more than twice the size of the tube, hence the practical size picture is limited to about twelve inches. CBS, however, can use a single three-color tube should a satisfactory tube of that type be developed. System uses 405 lines in place of the present standard black and white sys-

tem of 525 lines. Uses 144 fields in place of the present 60 fields used for black and white. This means existing black and white sets could not get black and white pictures from a CBS color transmission unless a manual or automatic adapter were used.

Radio Corporation of America: Early demonstrations were unsatisfactory, but later substantial improvements were noted. Recently demonstrated a single three-color tube to replace the three-tube system it had previously used. Whether the tube is ready for public utilization is one of the matters the Commission must decide. If and when the RCA tube is ready for public use and can be produced in quantity, the tube can be employed by the CBS system and, by its use, CBS can then discard the use of the mechanical rotating filter. Existing black and white sets can continue to get black and white pictures from RCA color transmissions. RCA color pictures require about four megacycles bandwidth, they cannot therefore go out in full definition over the coaxial cable which is 2.7 megacycles wide.

Color Television, Inc.: Uses the projection method. Claims it can display color by a direct view tube just as the other systems claim they can do. However, all demonstrations before the Commission have been from projection model receivers. Can probably utilize RCA direct view tri-color tube now in process of development and other such tubes being developed to a better advantage than the projection method.

This situation bristles with questions that the Commission must answer.

How important is it to have a system whose color transmissions can be received in black and white on existing receivers without the expense of an adapter? This is compatibility and it would mean that existing receivers would continue to bring in black and white pictures.

Should we give all of the systems more time for experimentation and development?

If further experimentation were permitted, how could the Commission protect the public against the obsolescence that would result in the event the Commission ultimately approved a system of color transmission whose pictures could not be received in black

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and white on present black and white receivers? Would manufacturers immediately build manual or automatic adapters in all television receivers to obviate such a threat of obsolescence in the millions of sets to be made during the next few years?

Should the Commission let several systems operate and let the public decide which is preferable? Would the public be willing to accept the risks involved in this procedure in view of the fact that ultimately, matters of economy and efficiency, might require the adoption of a single system?

Or must we reject all of the systems and say that we will proceed immediately with black and white television in both bands and let color wait until another generation or two, and in another and now unexplored portion of the spectrum?

I believe these questions indicate the complexity of the whole problem of allocating television channels, authorizing engineering standards and determining the feasibility of color.

However, those of us who have been close to the development of broadcasting and of television up to date and have seen the inventiveness of which American electronic scientists are capable have real grounds for being optimistic about the prospects for a sound solution to our present problems. The Commission concluded the color phase of the hearing in the latter part of May and is now studying the thousands of pages of testimony and exhibits in an effort to issue a decision on color in the near future.

Meanwhile network facilities to carry television programs over the nation continue to expand. At the beginning of 1949, there were 3,500 channel miles of such coaxial and radio relay facilities. By the end of this year there will be 15,000 channel miles reaching 40 cities.

Network facilities now extend from Boston down the Eastern coast to Norfolk and by Autumn will reach Jacksonville, Fla.; Atlanta, Ga.; and Birmingham, Ala. Memphis, Tenn., is already being served via Chicago. Des Moines, Omaha, and Minneapolis will be tied into the networks by this Fall. A radio relay will connect San Francisco and Los Angeles by September. The East and the West will finally be connected television-wise by 1952 when a radio relay will be completed between Omaha and San Francisco.

EMPHASIS ON MEN . . . . ?

(Continued from page 13)

of involuntary unemployment, can develop towards a full life.

Nor is it enough that industry should give security; it must go further and, first, fully employ its men and then offer them opportunities for development. I do not mean by full employment the provision of a minimum weekly wage. There is too much of that concept in industry to-day and too much concealed unemployment masquerading under the guise of full employment. Particularly is this so in the United Kingdom where men are often denied the proper tools of their craft and where the enforcement of controls, unfortunately still necessary, uses up so many men. By full employment I mean the employment of a man's operative talents and the development of those lying dormant within him.

It is *industry's* duty to make possible full employment—it is *man's* duty to employ fully all his talents. This duty is not the task of any branch of industry or any section of men or women in industry. Indeed, the more I serve in it the more I am convinced that, while there may be vertical divisions and functions in industry, there is no horizontal division between the men engaged in it. Both in Britain and the United States one hears far too much of the two sides of industry—of its management and its men, of its employers and its employed, of its bosses and its workers, of its staff and its operatives.

These divisions may have existed many years ago when owners of factories were wont to take on "hands" to serve their machines. They sought only the physical powers of men forgetting, or ignoring, the fact that the men had hearts and heads. Industry now demands all three, and industry must employ all three if it is to give *full* employment. When it does this as a matter of course, as it is being done as a matter of principle in enlightened industry, then this artificial barrier between the so-called two sides in industry will be discovered for the sham that it is.

Sincerity Must Be Convincing

There will be many who will seek to defend it for any division, however unreal, can be made a cause of conflict, and the basic truth of the identity of all in industry is unpalatable to those who, either sincerely—and there are many of these—or from evil motives, see a wide gulf between the interests of the managers and the managed.

It is, of course, of little use to adopt an ostrich-like attitude to the wall which has been built to divide industry into two sides and to ignore its defenders on both sides. They do exist and breaches in the wall are constantly being repaired by those who see in it a protection rather than a barrier to harmony and progress. Unfortunately these custodians of the barricade are often influential and they guard well their defenses, but if industry is to achieve its purpose it must convince all in it of its sincerity, and ruthlessly re-

"Think we'll be able to get away a few days before harvest time this year, dear?"

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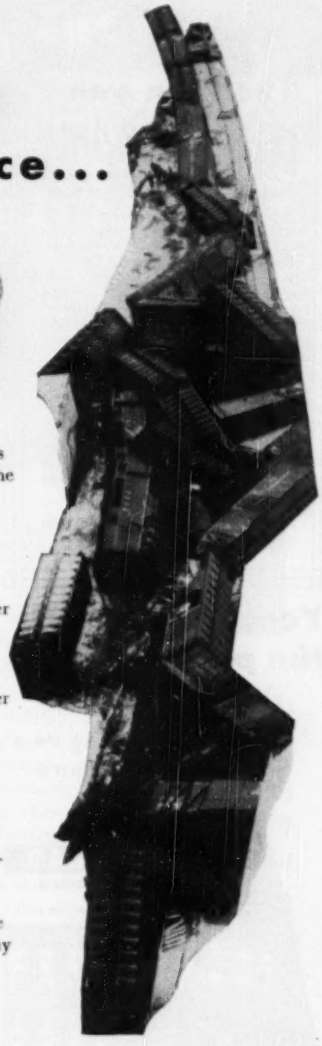

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move any artificial divisions which impede its progress towards its aim.

Industry must convince all engaged in it of its sincerity of purpose, as a living body, and not a conglomeration of machines and systems served by men to manufacture goods. Its purpose must be worthy and appeal to the logic, reason, and emotion of those who follow it. It must be personal since it refers to the purpose of men, and it must provide those men with an incentive for, first, their self-preservation and then their growth and development.

Can industry adopt such a purpose in a highly competitive world? I know it can, not only because it must but because the men and women who man it have come to demand it. In the past 40 years we have passed through two great World Wars, and from the ruins of the destruction has grown a new spirit. There is no longer a passive acceptance of what was termed the inevitable; men have come to question the validity of institutions and systems, and have seen much they wish to share in correcting. The materialism which threatened to absorb us between the wars has given place to something difficult to define but nevertheless clearly in evidence. In Britain, and in America, a renaissance has come about and in factories and offices, in board rooms, and at benches a new spirit of brotherhood is being born.

Industry must satisfy this new spirit by adapting new methods to these new times. It is becoming manned by new men who will seek to adapt and develop it. They must not be impeded in their efforts to breathe *life* into an institution still threatened, as I have said at the beginning of this article, with the danger of the subordination of its men to its machines.

I have seen, or have thought I have seen, during my short visit to this vital and vast country, a trend towards a wrong emphasis in industry. In some places, though not in all, the talk has been of machines and systems and seldom of men. Advertisements shout of increased efficiency, lower costs, higher production, and larger profits. So often one gets the impression that American industry is building a monster machine which will completely dominate the lives of its men and women and destroy their individuality; that this machine, in turning out products of a common pattern, is imposing a pattern on the men and women whom it should serve but who, in fact, serve it.

Not a Britisher like myself but an American, Charles A. Lindbergh, in his disturbing book entitled "Of Flight and Life," makes this plea:

"We must stop measuring our standard of life by automobiles, production curves, and dollars of income. We must realize that the efficiency of a factory is less important than the character it builds in its workers. . . . No standard of living is high . . . where vast numbers of people are so encumbered with mechanistic detail that the spirit has no chance to rise."

There Are So Many Questions

I would echo his injunction. American industry is magnificently equipped with machines and the initiative, enterprise, and courage of its men are known and admired the world over. It has every reason to be proud of its achievements, but has it a living purpose? Does it not subordinate its men and women to the story told in its balance sheets? Does it not put the development of its output of inert things before the development of its men? Where is its emphasis? Is it a vehicle for the development of the creative talents and spiritual powers of its men and women? Does it give full employment to hand, head, *and heart?*

These are questions that crowd in on me as I prepare to return to Britain. Two World Wars have been fought for freedom in this first half of the twentieth century, but has man secured his freedom? Have not the free institutions of his own device shackled him body and soul more securely than the chains of any conqueror?

Industry, everywhere, must unshackle its men by *sincerely* adopting as its primary purpose the promotion of their welfare, development, and security. It must restore its emphasis to its men.

Before it is too late, the leaders of industry must change its objectives or industry, in this technological age, may well destroy, more effectively than any dictator, the freedom of mankind, and with it all that a Christian civilization has attempted to create over the last 2,000 years.

PROFITS

(Continued from page 19)

depreciation practise which, in general, conform to that in Paton's *Accountants' Handbook*. In this Himmelblau (Third International Congress on Accounting) defines it as "the process of spreading the value of a fixed asset over the accounting periods comprising its life." The Wisconsin Public Service Commission defines it as "the loss or consumption of 'investment.'" Montgomery, in *Auditing Theory and Practice*, calls it "an allocation of the entire cost of depreciable assets to the operating expenses of a series of fiscal periods."

In those definitions, "Investment" and "Cost" and "Value" are analogous terms for expenditures to be recovered to avoid the depletion of capital. This limitation points out the error of business and tax procedures which have not recognized:

(1) that both capital and physical replacement must be recovered

(2) that Original Cost, Value, or Investment cannot safely be fixed as the price of physical replacement

(3) that capital replacement can be provided at Original Cost with no capacity for physical replacement at the same cost.

Those errors are proved by the frequency with which companies are finding that completed Original Cost reserves will not buy their needed replacement units. Properly, such a company has no source of funds within its existing capital structure to make up the deficit and it should go out of business for lack of operating equipment. In practise undistributed and tax-paid profits are being used to make up the difference so that operation may continue.

Such a plowing back of profits is the same as putting in new capital and writing it off as a loss—with no stock certificates or no new equity to show for it—since the replacement will not earn a penny more than its retired unit. If the extra cost should be written up as a capital addition, the same earnings will have to support more dollars and the capital structure has been diluted, with its earning value dissipated.

In such practises lies the dissipation of assets and earnings if a company blindly uses Original Cost Depreciation

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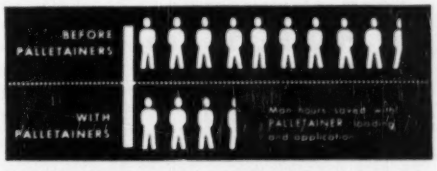

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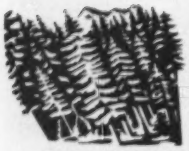

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tion and there lies the confiscation of property if such use is enforced by government.

As to definitions, we regard depreciation requirements as such charges against earnings over the useful life of depreciable assets as will provide for the replacement of capital expended for such assets and for their physical replacement when worn out or obsolescent.

Such a definition insures both fiscal and physical replacement within the existing capital structure. The current practise is to provide only for the recovery of the Original Cost as capital replacement—and never mind if it replaces physically or not.

This makes it fair to ask, "Why tie a replacement fund to the physical life of any asset if the recovery of capital is all that is involved?" It would be simpler to adopt a standard period of ten to fifty years to recover capital and forget depreciation and obsolescence.

That could be done only if the company does not expect to stay in business! For the essence of business perpetuation is to use up and replace the tools constituting our productive plant without added capital cost, as perpetually as the dollars constituting our capital are expended and replaced. In no other way can we insure the integrity of capital invested for an enduring business.

An Operating Charge

Such views require that capital be recognized as having a fixed base which is depleted when added to by anything except newly productive investment. Thus, unlike the inventory account, capital may not have "in and out" additions and subtractions caused merely by fluctuations in the costs or values of the fixed assets used for production except on liquidation. Just as profit or loss on inventory is realized only by constant acquisitions and liquidation, so to produce equivalent realizations on fixed assets would require that a business was made of buying and selling the company.

Thus excess costs for the replacement of fixed assets without additional earning capacity are not capital additions. They can come properly only from an operating charge against earnings. Their sole purpose is to maintain capital at its original investment level and to operate plant at no less than its original productive level. Such costs, then, may not appear as a write-up of assets, but should be placed in a reserve for the excess costs of replacements.

Some companies assume they can average rising and falling Original Costs against rising and falling Replacement Costs, and come out even. These undertake to balance a growing tax loss against no possible gain. For Original Cost is the lowest correct level for capital replacement. Thus, there can be no gain in taxes or profit to offset higher replacement costs when other replacements are made at prices lower than Original Costs.

The setting up of a replacement at higher cost as an increased capital asset with larger depreciation allowances to recover the cost, not only depletes the capital structure, it merely defers the higher charges for depreciation until the higher cost is established by acquisition.

Two Faults

Hence, over the years of operation and their repeating cycles of replacement, a business may appear to allocate the same total charges with the same operating results under Original Cost or Market Value Depreciation. There are, however, two important differences:

1. Deferring the provision for higher costs until the shortage is faced may find the company with no undistributed profits to make up the deficit, and unable to borrow or attract capital for a use that adds no profit and vitiates capital. Such hazards should be avoided as one would a plague.

2. By not building reserves to a foreseeably higher replacement cost year by year, taxes will be admitted as due on apparent and declared profits which, in fact, are deferred depreciation charges and not profit at all.

Against these faults in Original Cost Depreciation, Market Value Depreciation will:

1. Adjust all depreciation charges to the likely costs of replacements when due.

2. Admit no undue taxes.

3. Provide in fact for both fiscal and physical replacements when due.

Thus, a company using Market Value Depreciation will not declare false profits to be taxed and then recalled for

use with no equity value in exchange. It will gain financial stability and it will save its stockholders from the shocks of having to make up deficits from earnings which financial statements had led them to believe were their profits.

Further, while Uncle Sam is to blame for imposing taxes on profits that are not profits, he is not to blame for the deceptive accounting that is now prevalent. Confirming that, the following details on the use of Market Value Depreciation show that any company can set up its books now to make each of the gains in the three preceding paragraphs, with no loss in money or in conflict with Uncle Sam under present tax regulations.

Guessing Is Overcome

The tax losses and the profit deception now imposed by depreciation allowances that will not provide for replacement at higher than Original Cost can be avoided only by creating from to-day's income such reserves as will in fact provide for replacement at the actual market price when replacement is due. This is necessary even though it will be impossible to know to-day the exact amount of money it will take to duplicate a unit, five, twenty, or fifty years in the future.

The need for guessing is readily overcome, for no matter how long ago a unit has been acquired, the reserve based on Original Cost can have its remaining payments adjusted any day to provide that the currently prevailing cost of reproduction will become the reserve total when replacement is due and thus give an up-to-date guarantee that the depreciation reserve will replace at to-day's current prices.

If the remaining payments to a depreciation reserve are adjusted regularly to provide a reserve that will replace at to-day's current prices, the date for replacement will eventually merge with the current date, to provide for replacement when due at the then current costs.

This process we define as Market Value Depreciation.

In its adjustments, whenever the currently indicated cost of replacement does not exceed the Original Cost of acquisition, then the Original Cost of the unit will be used for the minimum reserve objective to insure financial re-

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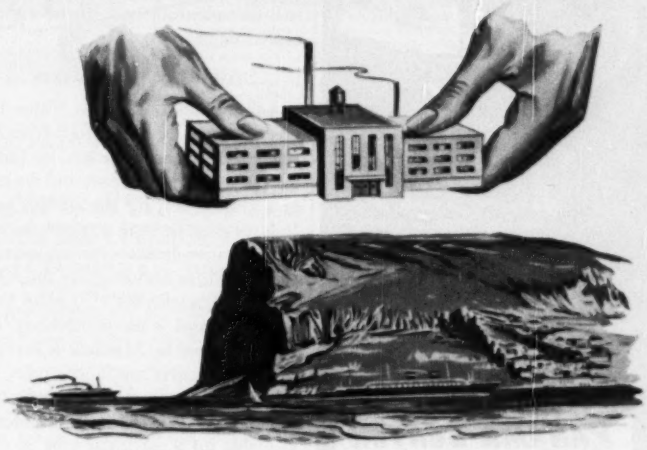

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placement of all of the originally expended capital.

When, however, the currently indicated cost of replacement does exceed the Original Cost of a unit, then the higher replacement cost must be used to insure physical replacement without capital depletion.

Authoritative Indexes

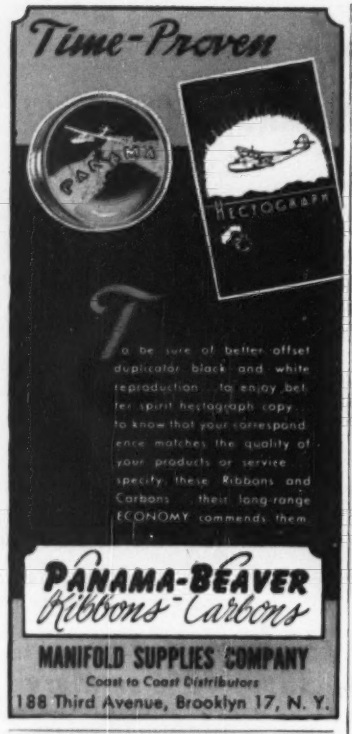
Adjustments for Market Value Depreciation can be determined from the relation of the cost, or a Cost Index, for the year of acquisition, and the cost, or a Cost Index, for the current year. Indexes must be from a reliable source. Authoritative Indexes for engineering works and for buildings are the *Engineering News-Record's* "Cost of Construction" and "Cost of Building" Indexes. Those by Marshall & Stevens, of Chicago, cover machinery, tools, fixtures, and furniture for 47 industries since 1913. Where no Cost Index is available for a particular type of unit, price quotations for the years involved will serve.

The official publication of Cost Indexes by the Federal Government would be welcomed, for the case for using Cost Indexes is strong. They are a graphic gage of relative values. If one is missing for a specific class, one for a similar class will not be too far off to serve the purpose. They are convenient and readily understood by clerical personnel.

Admittedly, no Cost Index can be as accurate as actual prices. These can be dug up for past years and for current periods. But such procedure should be resorted to only in the absence of Cost Indexes. For the labor of determining past and present prices could be large when special fields have to be combed by laymen. Their use would usually require expert knowledge beyond clerical resources.

Such labor and exactness are seen to be entirely uncalled for in the light of our need for only a measure of relative values, rather than the impossible determination to-day of the exact costs of units that will not be purchased until the lapse of years.

The real problem is to catch excess costs in the making. They can never be avoided when they are in the cards. But their impact can be tempered with frequent and reasonable adjustments.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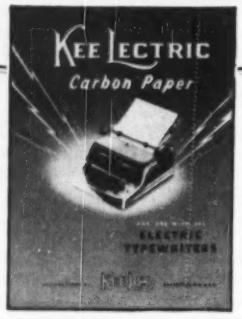

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A market-vane is needed to indicate trends. The adjustments must be simple, foolproof, and automatic in their application. The cumulative effect must come close enough to providing the actual costs of replacements, so that the results are useful and good business to use.

All these needs are met with Cost Indexes. Objections are that they will not be instantaneous indicators, since computation and publication will create a time-lag. Monthly averages will not give daily costs. Yearly Indexes may bury such wide extremes that a spot purchase on a high or low swing could have a seemingly anachronistic cost. Unquestionably, Indexes are averages that may never be duplicated at a given point of use.

Accurate Replacement Estimates

All that is true. But it is not disturbing if it is recognized that over the years of anticipated purchase, we have only to make estimates that will bear a reasonable relation to the final fact. Interim variations will be of no moment, since errors, and the abnormalities of passing conditions, will be compensated for in the self-checking process of subsequent adjustments; and final adjustment can be made on the basis of actual purchase.

By using Market Value Depreciation, with Cost Indexes to make periodic adjustments, it is possible to either hit the actual dollar of the cost of replacement when due, or to come so close to it that final adjustment is of no dollar concern and will require no more than routine accounting.

The adjustments for Market Value Depreciation can be made for each fiscal period, or the same allowances may be continued until there is evidence of an appreciable change in market values.

Such adjustments are the equivalent—but correct the inadequacies—of those now based on Original Cost Depreciation. A simple and scientific formula is here presented to keep reserves progressively adjusted to the indicated costs of replacing depreciable assets and the capital expended for them.

Where a company has many units of plant, machinery, and equipment, they can be treated singly, or combined by classes as of a Base Year.

A further simplification is to use the

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convention that the entire unit is depreciable. Where Salvage Value is anticipated it can be treated separately as a percentage of replacement cost, in an account of its own.

FORMULA FOR MARKET VALUE DEPRECIATION

C = Original Cost of Acquisition
R = Current Replacement Cost $= C \times \frac{\text{Cost Index in Current Year}}{\text{Cost Index in Acquisition Year}}$
D = Depreciation Reserve Accumulated through Preceding Year
Y = Years of Service Remaining after Preceding Year
A = Allowance for Current Year's Depreciation
Then:
$$A = \frac{(R) \text{ or } (C) \text{ (whichever is greater)} - (D)}{(Y)}$$

The following examples show that Market Value Depreciation presents no accounting difficulties; and when properly applied, there can never be a time when the accumulated reserves for depreciation will not be adequate for the due replacement of physical assets:

Presume that a building was constructed in 1929 at a cost of $100,000. The building has an estimated life of 50 years. A Cost of Construction Index—based on the years 1935-1939 as 100—gives a Cost Index for 1929 of 120; and for 1950, the year of adjustment, a Cost Index of 180, indicating a substantial rise in prices.

Depreciation through 1949 has been accumulated at the theoretical rate of 2 per cent or $2,000 a year.

Wanted: Allowance for Depreciation for the Year 1950.
Then: $C = \$100{,}000$
$$R = \$100{,}000 \times \frac{180}{120} = \$150{,}000$$
$$D = \$2{,}000 \times (1949 - 1929 = 20) = \$40{,}000$$
$Y = 50 \text{ yrs} - 20 \text{ yrs} = 30 \text{ yrs}$
Then: Since R is greater than C for the Year 1950,
$$A = \frac{R - D}{Y} = \frac{\$150{,}000 - \$40{,}000}{30} = \frac{\$110{,}000}{30} = \$3{,}667$$

This new depreciation allowance of $3,667 is $3\frac{2}{3}$ per cent of Original Costs. It takes the place of the $2,000 or 2 per cent for theoretical depreciation which would be deficient at current price levels. This allowance would be used annually until the need for a new adjustment is indicated by price changes.

Note that with this and similar adjustments to current costs, the depreciation reserve will exactly pay for the full cost of the building when replacement is due at higher price levels than Original Costs—with no necessity for meeting the excess costs from profits after taxes or with new capital.

"DOWN NORTH"

(Continued from page 22)

mark, over three-quarters of a million acres are estimated to be suitable for agricultural pursuits. The Peace River block is a much larger farming domain which has already proved to be one of the best grain-growing areas in the world. Its samples of coarse grains from well-established sections along the Northern Alberta Railways have often taken first prize at International Grain Shows. In this section, as well as throughout numerous valleys north, west, and east, there are stretches of good agricultural land open to settlement.

The northern zone can be classified, agriculturally, only as marginal; as one proceeds further north, as sub-marginal; and as absolutely worthless. Taking into account the entire agricultural area, it is estimated that 15 million acres are suitable for food production, sufficient to support a large population, probably one million people, and large troop forces, if necessary.

The forest resources are among the largest and, in some respects, the most valuable yet to be fully developed in the world. As far as surveys have gone, they show tabulations of nearly 100 billion board feet of merchantable timber. This estimate includes the great pine and spruce forests of the North Pacific Coast and central British Columbia which are contiguous to the Canadian North, though not classified as part of it. Northern Alberta alone is estimated to have over 10 billion board feet, and the Yukon and Mackenzie Valley districts over 6 billion. Elsewhere the North is largely barren of timber, except for scrub stands here and there, suitable only for local purposes.

About one-third of the total 100 billion feet is regarded as accessible, that

is within economic reach, and this proportion is being utilized quite substantially. Saw mills, some of considerable size, are in operation throughout the coastal and central areas of British Columbia. At one point close to Prince Rupert a large wood pulp mill is under construction. Lumbering on a commercial scale extends quite far north, even beyond the Peace River block, from whence shipments have been made as far south as Pittsburgh.

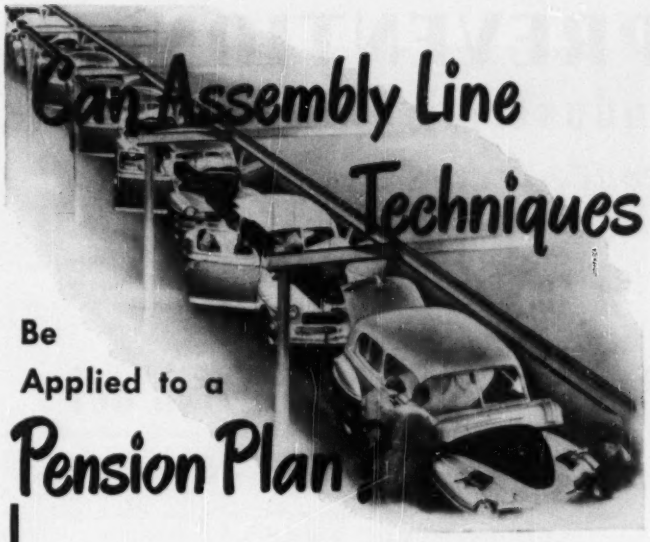
Mineral Deposits

The Canadian North is a highly mineralized region. It is underlain with the intrusive rock formations—pre-Cambrian and Mesozoic, for example—which are the most prolific of metals. It is also underlain with ancient sea beds containing vast deposits of mineral fuels developed by nature.

Moreover, the mineralized area extends further north than the best agricultural and forest districts, although only the richest are of economic value under present high-cost operation and transportation conditions. The gold and uranium discoveries are the most spectacular, but the known mineral occurrences are of more extensive character, for they include silver, copper, lead, zinc, tungsten, salt, gypsum, mercury, antimony, coal, and petroleum. The most important, yet among the least developed of these resources, are coal and petroleum. The known coal deposits, lignite, bituminous and anthracite, are widely distributed over several thousand square miles. One field in the Peace River block is estimated to contain over a billion short tons.

In the Mackenzie Valley, and centered at Fort Norman, is the oil field extending over a distance of at least 250 miles, which supplied the pipe line to Whitehorse during the last war, at an average daily rate of 4,000 barrels. Further south, and not far from a railway terminus, are the Athabasca tar sands, estimated to contain enough petroleum to provide for the requirements of the world for 30 years, but awaiting economical methods of extraction and more favorable market conditions.

Water is another great natural resource. The North Pacific and tributary streams are among the world's largest fishing grounds where commercial fishing, particularly for salmon and



THE objectives of every pension plan may be the same. But the methods used to arrive at these objectives may vary greatly from plan to plan.

For example, in one company the average age of those to be covered by the pension plan may be much higher than the average age of employees in another company. The average length of service in two companies can be as different as day is from night. These factors call for special treatment, particularly in selecting the method of funding past service costs.

The most effective pension plan takes into consideration the different conditions that must be met in each company. The plan is then built step by step to meet these individual conditions.

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halibut, is on a large scale. The interior of the Canadian North is studded with lakes and rivers, some of considerable size and abounding in the finny tribe. Great Bear Lake has an area greater than Lakes Ontario and Erie. Great Slave Lake, of over 10,000 square miles, is the fifth largest lake in North America. Commercial fishing is established there, partly for the American market. Fishing along the Mackenzie for local needs is carried on throughout the length of this stream, from its source, Great Slave Lake, to its outlet, the Arctic Ocean.

A Wealth of Resources

Water power sites have been located in the entire Northern region capable of providing nearly 5 million horse power at ordinary minimum flow. The innumerable lakes and rivers serve another purpose, namely, to attract tourists, or perhaps it would be better to say, sportsmen. The Alaska Highway broke open a virgin country and it traverses quite lengthy stretches of lake, river, mountain, and forest areas. But it was built, primarily, as a military road, and tourist considerations were not taken into account, with the result that it includes quite long stretches of monotonous country.

It is an all-weather road, wide (up to 36 feet), well graded, and for the most part gravelled surface. In recent years bus service, accommodation facilities of the frontier type, and a few gasoline and oil stations have been established along the entire route. Notwithstanding its physical limitations, it does afford the sportsman entry to the most unspoiled fishing and hunting region left in North America, one where he can find moose, caribou, bear, and mountain sheep, as well as a large variety of fish, including trout weighing up to 30 pounds. There are alternate routes for tourists and sportsmen—the popular Inside Passage Tour up the Pacific Coast on large, well-appointed vessels to Skagway, thence by rail to Whitehorse and from there by river boat down the Yukon waterways. This journey of scenic splendor has been enjoyed by many thousands of American people.

Air travel has developed quite rapidly, particularly for busy people pressed for time, and for those who de-

sire to reach the most remote points beyond other means of transportation. A number of well-equipped airports are maintained, as well as additional landing fields, some at 100-mile intervals. Under present conditions, the volume of air traffic is light, but the commercial airways are well organized for year-round service. Indeed few, if any, other parts of the world are as well served for the exploration and development of natural resources as this Northern country. Flying hazards are steadily being reduced by improved techniques for cold weather operations, radar signals, and high altitude navigation.

Shorter Air Routes

A Northwest Passage *has* been found at last, through *air channels*. The Canadian North is the arc of the Great Circle, across which is the shortest air route between Europe and Asia, as well as between the center of the United States and European and Asiatic areas. The Chicago-Moscow route, via Alaska and Siberia, is nearly 10,000 air miles, but only half that distance by way of Labrador, Greenland, Scandinavia, and the Baltic. It is over 11,000 miles from Chicago to Calcutta through San Francisco, Honolulu, and China, but not more than 7,500 over Hudson's Bay, the North Polar area, and Siberia. An airplane taking the San Francisco-Honolulu route to Tokyo flies over 8,000 miles, but not much more than 6,000 via Edmonton, Alaska, and the Kamchatka Peninsula.

The Canadian North can no longer be regarded as a land of ice and isolation. As a noted political scientist of France has said: "In the future it will be possible to develop the Great North, but it will be done under conditions that the last generation never even dreamed of. On the other hand Canada now finds herself placed on continental air routes which already seem to be the axes of the future. Marvelous possibilities are looming up but it is the end of security, for the Pole has become a zone of imperialism and will eventually be a field of battle . . . the Great North which only yesterday figured as a liability in the Canadian balance sheet is likely to be a splendid asset in the future. Perhaps the existence of this Great North is the finest and most original aspect of the Dominion of

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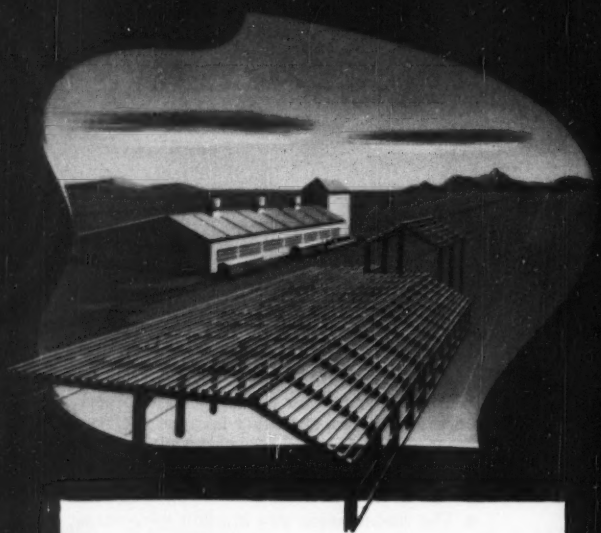

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Canada's geographic personality.*

It is to be hoped, of course, that the North will not become a battlefield, but in a peaceful way have its rich resources more fully opened up so as to offset the depletion of other and more accessible supplies that the industrial world is using up so rapidly. But if events again should turn it into a scene of military operations, it could be made a formidable barrier to a "back-door" attack on North America.

* *Canada, An International Power*, by André Siegfried.

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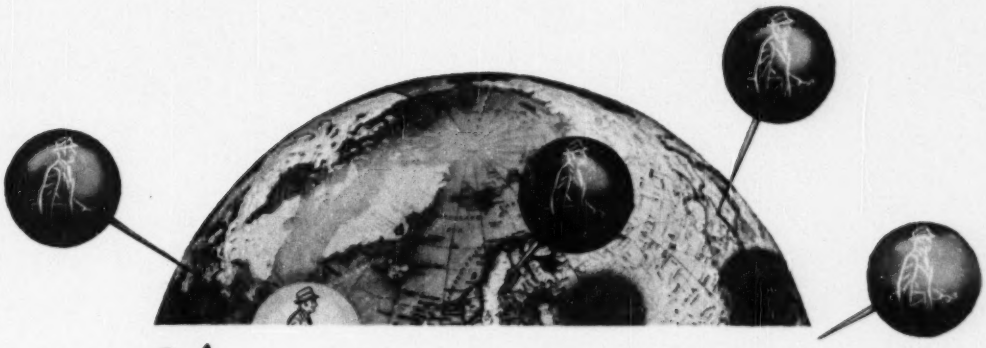

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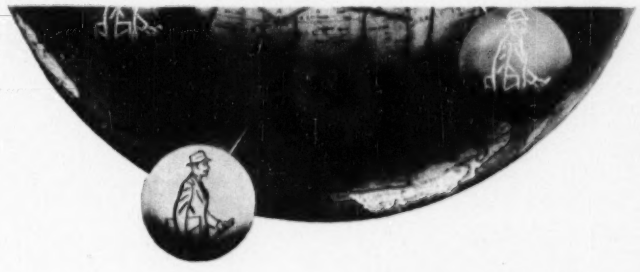

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